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Gazes on the Environment

A Jumble of Thoughts on Ecology and Society



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Gazes on the Environment. A Jumble of Thoughts on Ecology and Society
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Introduction

Environmental discourse today is marked by profound contradictions. On the one hand, we witness an unprecedented proliferation of green narratives – from political pledges to corporate sustainability campaigns – while on the other, environmental degradation continues with alarming intensity. This volume explores the tensions, paradoxes, and ideological conflicts at the heart of contemporary environmental thought, practice, and representation.

Divided into four parts, the book opens with a critical investigation into the intellectual landscape of environmentalism. This first part questions the dogmatic tendencies in ecological thinking and the rhetorical weight of environmental discourse, offering philosophical and cultural reflections, including an analysis of the *Anthropocene* as framed by Simon L. Lewis and Mark A. Maslin.

Part II shifts the focus to energy and climate, confronting the complexities of energy transitions, geopolitical realignments, and the socio-political gridlocks that impede meaningful action. Here, the chapters examine offshore drilling debates, climate literature, and the intersection of environmental justice with indigenous and local resistance.

In part III, the discussion turns to resources, animals, and environmental imaginaries. From the ethical ambiguities surrounding water scarcity to the ideological symbolism of animals and the ecological undercurrents of Japanese anime, this section highlights how culture and ethics shape our

understanding of nature and crisis. Finally, part IV grounds the global discourse in the Italian context, tracing the environmental legacy of Seveso, the cultural and political dynamics of land use, and the contradictions within populist environmental rhetoric.

The essays collected here were originally written in Italian between 2016 and 2018. As such, they offer a snapshot of a critical period in which environmental issues were rapidly gaining visibility, yet often remained trapped in symbolic gestures and conflicting interests. Taken together, these reflections do not seek to offer definitive answers but rather to expose the contested terrain of environmental engagement. They invite readers to think critically about how narratives, ideologies, and power structures mediate our relationship with the planet, and what it might take to move beyond slogans toward genuine transformation.

Part I

Environmental Thought: Ideas in Conflict



1. The Environment in the Quagmire of Dogmatism

In an age of seductive narratives and the fluidity of socio-political processes¹, there remains one thought that stubbornly maintains a strongly ideological character: the idea encapsulated in the concept of political environmentalism. Born in the early 1970s and now approaching its fiftieth anniversary, political environmentalism has evolved into a fetishized idea, caught within a confused galaxy of often antagonistic movements that frequently nullify one another through their opposing dogmatisms.

Within this nebulous and multifaceted constellation, two polar stars intermittently shine: the first aligns with what may be termed «skeptical environmentalism», and the second with «collective environmentalism».

The star of environmental skepticism began to shine in the early 21st century, with the publication of *The Skeptical Environmentalist* by Danish author Bjørn Lomborg². In this bestselling book – translated into Italian in 2003 by Mondadori as *L'Ambientalista scettico. Non è vero che la Terra è in pericolo* – Lomborg argued that

¹ Colin Crouch, *Post-democracy*. Malden, MA: Polity, 2004; Manuel Castells, *Communication Power*. Oxford: Oxford University Press, 2009; Christian Salmon, *La cérémonie cannibale. De la performance politique*. Paris: Librairie Arthème Fayard, 2013.

² Bjørn Lomborg, *The Skeptical Environmentalist. Measuring the Real State of the World*. Cambridge: Cambridge University Press, 2001.

environmental problems, which he judged to be far less severe than reported by leading international institutions (UNEP, IPCC), could be resolved through the continued application of existing policies.

In 2010, Patrick Moore – co-founder and former seven-year director of Greenpeace International – published *Confessions of a Greenpeace Dropout* (later translated into Italian (2011) as *L'ambientalista ragionevole. Confessioni di un fuoriuscito da Greenpeace*) wherein he sharply criticized Greenpeace's hostility toward «science, economics, and [...] humanity», proposing instead a technocratic vision of environmentalism based on «scientific research»³.

These two books illustrate how appealing such a perspective can be, especially within public discourse. Firstly, the *scientific rationality* at its ideological core is effective in countering the strong ideological slant of collective environmentalism, which is currently dominated by grassroots committees («No TAV», «No Tram»...). These groups often base their ideology on radical perspectives such as anti-utilitarianism, organicism, bioregionalism, and deep ecology. Such views are used to erect ideological barriers and explicitly avoid – or restrict – constructive dialogue with formalized environmental organizations (Legambiente, WWF) and political decision-makers.

Secondly, the anthropocentric vision (prioritizing human needs over those of nature) underlying technocratic environmentalism does not conflict with capitalist economics or representative democracy. By contrast, civic committees tend to oppose the *true will of the people* to that of legitimately elected institutions, thus delegitimizing representative democracy – deemed an expression of oligarchies – In favor of the virtues of direct democracy.

Thirdly, the skeptical-technocratic view presents itself as a credible alternative to outright denialism, which often combines

³ Patrick Moore, *Confessions of a Greenpeace Dropout: The Making of a Sensible Environmentalist*. Vancouver: Beatty Street Publishing, 2010.

anthropocentrism with reactionary religious orthodoxy to promote blatantly false and anti-scientific claims⁴.

In Italy, skeptical environmentalism has recently been reinvigorated by Chicco Testa's *Contro (la) natura*⁵. Testa's book is both compelling and, to some extent, persuasive, precisely for the reasons outlined above: he does not deny the existence of an «environmental issue» (he was, after all, a former anti-nuclear activist and president of Legambiente). His narrative begins with a (valid) critique of the dogmatic rigidity and biocentric drift of environmentalist thought, which, in its localist declination, ends up losing its innovative thrust and global perspective, becoming instead a social actor defending narrow interests or uncritically supporting ideologized and fundamentalist theories.

However, the problem is that Testa (like other champions of technocratic environmentalism) fails to recognize that even the skeptical narrative does not escape the dogmatism he attributes to collective environmentalism. In this case, the dogma lies in the overestimation of technological innovation, regarded as a «Pandora's box yet to be explored» capable of producing «things we cannot even imagine» (p. 127). While it is true that human evolution can be seen as «a long journey [...] from the natural to the artificial» (p. 89), it is equally true that this journey has caused problems (pollution, overexploitation of natural resources, poor land management) that have sometimes resulted in actual disasters. Underestimating this «dark side» of technological innovation contributes to a partial

⁴ Laurent Larcher, *La face cachée de l'écologie: un antihumanisme contemporain?* Paris: Les éditions du cerf, 2004; Riccardo Cascioli, Antonio Gaspari, *Le bugie degli ambientalisti. I falsi allarmi dei movimenti ecologisti*. Casale Monferrato: Piemme, 2004; Riccardo Cascioli, Antonio Gaspari, *Le bugie degli ambientalisti. I falsi allarmi dei movimenti ecologisti. II*. Casale Monferrato: Piemme, 2006; Riccardo Cascioli, Antonio Gaspari, *I padroni del pianeta*. Casale Monferrato: Piemme, 2009.

⁵ Chicco Testa, *Contro (la) natura. Perché la natura non è buona né giusta né bella*. Venezia: Marsilio, 2014.

reading of the real – and highly complex – dynamics of environmental issues, distancing us from both their understanding and resolution.

As for collective environmentalism, the star of formalized environmental associations (which emerged in the 1980s with national and international vertical organizations, combining a central structure with peripheral branches managed by regular activists and broad voluntary grassroots participation) has been dimmed by the rise of ideologically driven grassroots groups and civic committees. This shift toward a more radical environmentalism has been reinforced by literature (including environmental historiography), which tends to interpret environmental transformations through the increasingly popular ecocentric lens of political ecology. On the journalistic front, a recent example is Giulio Milano's *La terra bianca* which recounts the consequences of a Montedison tank explosion in the industrial area between Massa and Carrara⁶. Milano reduces the event to a familiar cliché, portraying the natural environment (and individuals, equated with nature) as victims of a development model devised by unscrupulous politicians and industrialists, seen as detached from the community. He does so without questioning the collective endorsement of the late-twentieth-century development model or the attitudes of workers and unions who, for decades, prioritized employment over health, discovering environmentalism only after deindustrialization had already decimated jobs.

Another example is Gabriella Corona's *Breve storia dell'ambiente*⁷. Corona, an environmental historian, outlines Italy's environmental challenges as primarily caused by urbanization and industrialization. In doing so, she fails to free her analysis from the influence of stereotypes dear to antagonistic Marxism, which forms part of the environmentalist movement and environmental historiography. Her book largely ignores the role of collective consumption patterns and

⁶ Giulio Milano, *La terra bianca. Marmo, chimica e altri disastri*. Roma-Bari: Laterza, 2015.

⁷ Gabriella Corona, *Breve storia dell'ambiente in Italia*. Bologna: il Mulino, 2015.

consequently overlooks the reasons why millions of people accepted living in unhealthy and alienating environments in exchange for a sense of progress and civilization. While her interpretation may apply to the years of accelerated development (when consumption already played a key role), it proves inadequate in explaining the persistence of these issues over the past three decades.

In conclusion, just like the skeptical literature, that aligned with collective environmentalism also filters the dynamics underlying environmental problems through the lens of ideology, thereby molding them to serve specific public agendas. In doing so, the debate surrounding environmental issues continues to stagnate in a quagmire of dogmatisms that prevent the most innovative and complex analyses from reaching wider audiences.

2. The Hollow Gravity of Green Discourse

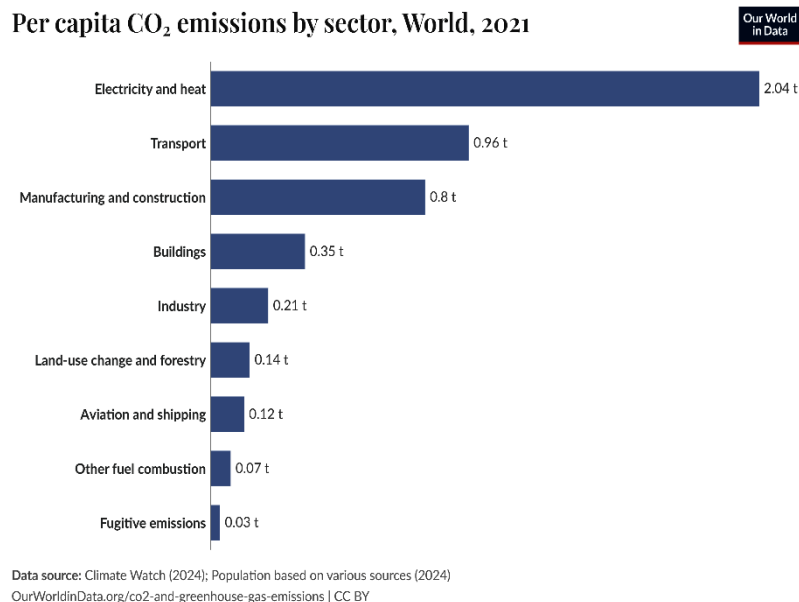
A survey conducted by the research institute Demos & Pi (June 3, 2016) asked respondents to express their level of agreement (or disagreement) with a list of selected words frequently used in media communication and everyday language. The highest preferences were given to the phrases «environment and renewable energies» (81%) and «Internet» (81%), followed by «fighting unemployment» (76%) and «food security» (74%).

The environmental issue, therefore, seems to occupy an increasingly prominent position in public discourse. All good, then. Or perhaps not... The problem is that emotional and ideological tones often overshadow scientific aspects. Let us explore how certain seemingly unanimous arguments can be used to support an ideological (and, not infrequently, biased) interpretation of ecological issues.

In «Internazionale» (May 20–26, 2016, p. 7), an editorial by Giovanni De Mauro pointed out that the «catastrophic effects of climate change» are beginning to «exceed the thresholds beyond which any intervention risks arriving too late». Quoting the documentary *Cowspiracy*, «FAO figures», and «a 2009 report from the Worldwatch Institute conducted by two scholars associated with the World Bank», De Mauro identified a cause of climate change (as well as of «environmental degradation and resource consumption») that is «seldom discussed»: «animal farming».

Beyond the scientific approximation of the content, what is truly startling is the figure derived from the Worldwatch Institute report claiming that 51% of greenhouse gas emissions originate

from livestock. According to the *Fifth Assessment Report* by the Intergovernmental Panel on Climate Change (IPCC), 25% of global greenhouse gas emissions stem from fossil fuels used for electricity and heat production; 24% from agriculture, forestry (including deforestation), and other land use; 21% from industrial activity; 14% from transportation; 11% from the energy sector not directly tied to electricity and heat production; and 6% from domestic activities (such as «burning fuels for heat in buildings or cooking in homes»).



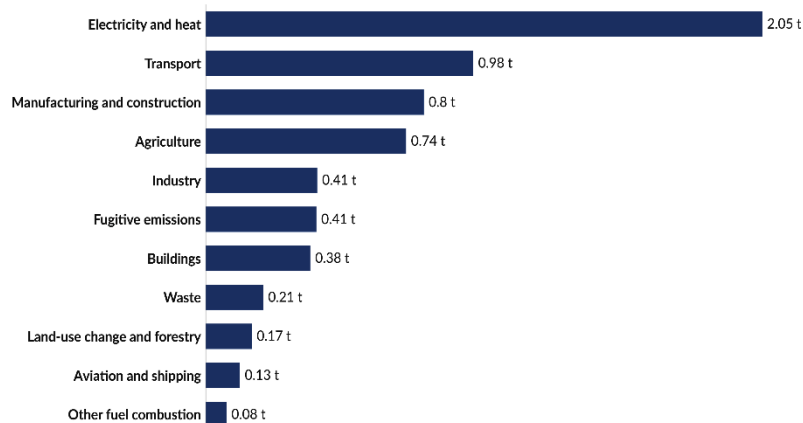
In the United States, greenhouse gas emissions from agricultural activities account for 9%, behind those from the energy sector (30%), transportation (26%), industry (21%), and residential and commercial activities (12%). In the European Union, estimates for greenhouse gas emissions are as follows: energy production 26.6%; manufacturing and extractive industries 20.6%; domestic activities 19.6%; agriculture, forestry,

and fishing 11.5%; transportation 10.9%; other services, water supply, construction 10.9%¹.

In short, the main figure used by De Mauro (from the Worldwatch Institute) diverges significantly from estimates provided by leading institutions. Reading the article's conclusion reveals the rationale behind the author's selection of sources: «[...] the point is that while addressing other forms of pollution (transport, industry, energy production, construction) requires a great deal of time and enormous joint efforts by governments and corporations, significantly reducing the consumption of meat, fish, milk, and eggs would not only have a major and immediate effect on climate change, but above all, it is a decision that anyone can make, at any moment. It's a choice we thought we could postpone to our children. Perhaps we no longer can».

Per capita greenhouse gas emissions by sector, World, 2021

Per capita greenhouse gas emissions¹ are measured in tonnes of carbon dioxide-equivalents² per person per year.



Data source: Climate Watch (2024); Population based on various sources (2024)

Note: Land-use change emissions can be negative.

OurWorldinData.org/co2-and-greenhouse-gas-emissions | CC BY

¹ <https://www3.epa.gov/climatechange/ghgemissions/sources.html> (Last accessed, August 2016); https://ec.europa.eu/eurostat/statistics-explained/index.php?title=New_and_updated_articles_2016 (Last accessed, August 2016)

De Mauro uses the argument of climate change – certainly the most widely known even among the less informed – to direct the reader's attention toward the true aim of the article: promoting a vegetarian/vegan diet (one of the key tenets of radical environmentalism), portrayed not only as an ethically sound behavior (the author references «ethical doubts about killing and eating animals»), but also as a potential solution to the problem of climate change.

Marco Armiero, in his afterword to a book by Ramachandra Guha², offers an interpretation of Italian environmentalism – particularly grassroots movements opposing locally unwanted land uses, often referred to by the acronyms Lulu or Nimby – using the category of the environmental justice movement. He writes that «[...] in these socio-environmental struggles, the defense of nature coincided with the defense of health or the very survival of those involved, giving rise to an original form of environmentalism that often does not even define itself as such». In this light, Armiero describes the No Tav movement in the Susa Valley as an expression of a «rebellious and communal mountain identity built through conflict, opposing its own marginalization to the invasive and colonial power of metropolitan centers, be they Rome, Turin, or Paris». One almost has the impression that the author is referring to some remote native Amazonian community – indeed, Armiero grounds his discussion in the notion of the *environmentalism of the poor* – rather than a grassroots movement arising in an area where municipalities rank high in national average taxable income (to cite a few: Avigliana 495th, Bardonecchia 708th, Bussoleno 1617th, Susa 2001st)³.

Moreover, Armiero overlooks the fact that, in Italy, the majority of grassroots movements against locally unwanted land uses actually oppose renewable energy plants (45.64% of total contestations in 2011; 37.20% in 2014), precisely those associated with the phrase ranked first in the Demos & Pi survey:

² Ramachandra Guha, *Environmentalism: a Global History*. New York: Longman, 2000. [*Ambientalismo. Una storia globale dei movimenti*. Roma: Linaria, 2016].

³ www.infodata.ilsole24ore.com (Last accessed, August 2016).

«environment and renewable energy». Clearly, the issue is far more complex than the way Armiero simplifies it through interpretive frameworks that – ideological biases aside – do not adequately fit the historical dynamics and social realities of Italy. However, these very categories serve well in constructing a narrative aligned with the theoretical foundations embraced by the more radical segments of the environmental movement, aiming to provide historical legitimacy for such an approach.

Stepping away from current events, it is not difficult to find an example demonstrating how, when addressing ecological issues, one can fall into erroneous evaluations, despite having the capacity to formulate sophisticated arguments. In 1993, at the dawn of the mass diffusion of personal computers and the Internet, Hans Jonas – a German philosopher known for his essential works on nature and technological civilization – stated that «computers, as far as I can assess, have no negative consequences for the planet's ecology. On the contrary, with their help, one can warn against possible ecological disasters»⁴.

Twenty-three years later, electronic devices are considered a significant cause of serious environmental problems⁵: they consume vast amounts of energy; they constitute a hazardous category of special waste due to their toxic substances; and they fuel a major illegal trade to developing countries (China, India, and Africa), where they are disposed of cheaply using artisanal methods that endanger workers' health. Greenpeace, for example, estimates that in New Delhi alone, about 25,000 workers are employed in electronic waste recycling. In less than a quarter

⁴ Hans Jonas, *Sull'orlo dell'abisso. Conversazioni sul rapporto tra uomo e natura*. Torino: Einaudi, 2000 [orig. ed. *Dem bösen Ende näher*. Frankfurt am Main: Suhrkamp, 1993].

⁵ See, e.g., https://www.worstopolluted.org/projects_reports/display/107 (Last accessed, May 2025); *Il Ghana tra le prime destinazioni del traffico illecito di e-waste*, <https://www.nigrizia.it/notizia/ghana-prime-destinazioni-traffico-illecito-e-waste-rifiuti> (Last accessed, May 2025); Jennifer Gabrys, *Digital Rubbish: a Natural History of Electronics*. Ann Arbor: University of Michigan Press, 2011; Josh Lepawsky, *Electronic Waste: a Reference Handbook*. New York, NY: Bloomsbury Academic, 2025.

century, a technology once considered (not only by Jonas) a likely solution has generated new environmental problems.

In conclusion: to promote genuinely informed awareness about the many facets of the environmental issue, it is increasingly necessary to cleanse the debate of both ideological and instrumental narratives, as well as teleological ones. In today's context – characterized by the rising prominence of radical environmentalism and the proliferation, facilitated by new communication platforms (social networks), of self-proclaimed experts who spread unscientific or even anti-scientific information – achieving this goal is anything but easy.

3. Reflections on the Concept of the *Anthropocene* after Reading *The Human Planet* by Simon L. Lewis and Mark A. Maslin

The theory of the Anthropocene is one of the most widely discussed and popular scientific ideas regarding the relationship between human beings and geological time to have emerged in the 21st century¹.

In 2000, the chemist Paul Crutzen adopted the term Anthropocene – originally coined by microbiologist Eugene Stoermer in the 1980s – to emphasize how the use of fossil fuels had inaugurated a new geological epoch in which all major environmental transformations could be attributed to human

¹ The literature on the Anthropocene is now vast. Among the many, see: Jan Zalasiewicz, Mark Williams, Alan Haywood, Michael Ellis, *The Anthropocene: A New Epoch of Geological Time?*, «Philosophical Transactions: Mathematical, Physical and Engineering Sciences», 369, 1938, 2011, pp. 835-841; Will Steffen, Jacques Grinevald, Paul Crutzen, John McNeill, *The Anthropocene: Conceptual and Historical Perspectives*, «Philosophical Transactions: Mathematical, Physical and Engineering Sciences», 369, 1938, 2011, pp. 842-867; Joanna Zylinska, *Minimal Ethics for the Anthropocene*. Ann Arbor: Open Humanities Press, University of Michigan Library, 2014; Tom Cohen, Claire Colebrook, J. Hillis Miller, *Twilight of the Anthropocene Idols*. London: Open Humanities Press, 2016; John R. McNeill, Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945*. Cambridge: Belknap Press of Harvard University Press, 2016; John W. Kress, Jeffrey K. Stine, *Living in the Anthropocene: Earth in the Age of Humans*. Washington, DC: Smithsonian Books, 2017; Julia Adeney Thomas, *Altered Earth: Getting the Anthropocene Right*. Cambridge: Cambridge University Press, 2022.

activity². According to Crutzen, the extraordinary scale of anthropogenic impact – characterized by the intensive use of fossil fuels, a substantial rise in pollution and greenhouse gas emissions, and the accelerated extinction of numerous plant and animal species – justifies the consideration of the present as a geological epoch distinct from the Holocene (which began approximately 12,000 years ago, following the last major glaciations).

The concept formalized by Crutzen is not entirely new: in the 1870s, the geologist Antonio Stoppani coined the expression Anthropozoic era to highlight the influence of human activity, while in 1926, the geochemist Vladimir Vernadsky introduced the term noosphere to underscore the disruptive entrance of humans into the biosphere that is «the unique region of the Earth's crust inhabited by life».

However, the notion of the Anthropocene does not enjoy unanimous consensus within the scientific community. In 1999, entomologist Michael Samways proposed the term Homogenocene³ to describe a new historical-biological era that began with European voyages of exploration in the 15th century. This era is characterized by a progressive biological homogenization of global ecosystems. The concept was later taken up by Charles Mann and subsequently by Steven Mentz, who considers it a more neutral term, carrying less political weight than Anthropocene⁴.

In 2016, Jason W. Moore argued that the concept of the Anthropocene is dangerous, as climate change is not the result of human action in the abstract, but rather the most evident consequence of centuries of capitalist dominance. Moore therefore coined the term Capitalocene, by which he refers to a

² Paul Crutzen, Eugene Stoermer, *The Anthropocene*, «IGBP Newsletter», 41, 2000, pp. 17-18; Paul Crutzen, *Benvenuti nell'antropocene*. Milano: Mondadori, 2005.

³ Michael Samways, *Translocating fauna to foreign lands; here comes the Homogenocene*, «Journal of Insect Conservation», 2, 1999, pp. 65-66.

⁴ Charles C. Mann, *1493: Uncovering the New World Columbus Created*. New York: Knopf, 2011; Steven Mentz, *Shipwreck Modernity: Ecologies of Globalization 1550-1719*. Minneapolis: University of Minnesota Press, 2015.

world-system rooted in capitalism understood as an ecological regime that, beginning in the 15th century, increasingly appropriated vast portions of what he calls *cheap nature*⁵.

The book by Simon Lewis and Mark Maslin – after devoting the first eight chapters to a broad narrative of human history within a now well-established *longue durée* global approach (André Gunder Frank, Immanuel Wallerstein, Alfred W. Crosby, Jared Diamond, Yuval Harari...) – equates the Anthropocene with the birth of the modern world⁶. They argue that after 1610 (a year in which the lowest atmospheric CO₂ concentration in recorded history was observed), human activity had increasingly large impacts, eventually bringing the Earth into a new state, a kind of new Pangaea from which a new evolutionary trajectory would emerge. From that point onward, according to the authors, humans became a force of nature, capable of altering the planet's balance through their ways of living (mercantile capitalism; industrial capitalism; consumer capitalism) and their exploitation of energy sources (globalized crops, coal, whale oil; fossil fuels, fertilizers; fossil fuels, hybrid crops, nitrogen-based fertilizers).

What is unconvincing in most Anthropocene narratives (including that of Lewis and Maslin) is their tendency to frame human history exclusively as a negative sequence of environmental missteps. The Great Acceleration following the Industrial Revolution certainly generated new environmental problems, but it also enabled humanity to achieve levels of well-being – both material and non-material – unprecedented in any previous era. One need only consider the dramatic rise in global life expectancy, from around 40 years in the 18th century to over 71 today.

More recently, Marco Armiero has proposed the concept of the Wasteocene, considering the contemporary era as one characterized by the profound impact of waste production and

⁵ Jason W Moore (ed.), *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism*. Oakland, CA: PM Press, 2016.

⁶ Simon L. Lewis, Mark A. Maslin, *The Human Planet. How we Created the Anthropocene*. London: Penguin Books, 2018.

management on both human societies and the environment⁷. In this framework, waste is not merely a material by-product, but also a symbol and mechanism of social exclusion: entire communities are sacrificed to sustain the global production system, bearing the health, environmental, and economic consequences of waste disposal.

Drawing on concrete case studies – including the Terra dei Fuochi (Land of Fires) in Southern Italy – Armiero demonstrates how environmental injustices are politically and historically constructed, rather than accidental or isolated incidents. Waste, in this context, becomes a form of systemic violence inflicted on the most vulnerable populations. He challenges the dominant narrative of the Anthropocene, which attributes ecological responsibility to a generic and abstract humanity. Instead, he advances the notion of the Wasteocene to underscore the specific responsibilities of political and economic systems. The book calls for the reimagining of resistance, care, and environmental justice. By recovering voices and memories from the toxic underside of modernity, Armiero urges the construction of alternative, more equitable futures.

The present is undeniably marked by inequality, structural disparities, and immense challenges, not least climate change. However, excluding from the narrative the economic, social, cultural, scientific, and technological progress achieved since the 17th century risks reinforcing a rigid ecocentric worldview. This perspective – often aligned with the imperatives of political correctness – may offer moral reassurance, but contributes little to a deeper understanding of the complexity of today's global condition.

Marco Armiero's *Wasteocene* offers a valuable contribution to this debate by showing that any analysis of humanity's influence on the environment cannot overlook the social and cultural dynamics that have historically shaped both environmental transformations and power relations.

⁷ Marco Armiero, *Wasteocene: Stories from the Global Dump*. Cambridge: Cambridge University Press, 2021.

Rather than opposing progress to environmental degradation, Armiero reveals how they are historically and politically intertwined. His critique helps dismantle simplistic dichotomies and calls for a more nuanced reading of modernity, one that accounts for both the achievements and the toxic legacies of development. In doing so, Armiero highlights the need to rethink the categories through which we interpret the Anthropocene, grounding them in concrete social and historical processes rather than abstract generalizations.

Part II

Unplugging the Fossil Future: The Trouble with Energy Transitions



4. The Energy Debate, Offshore Drilling, and the Referendum Impasse

«I do not believe it is wise to resort to referendums on energy issues, especially given the widespread unpreparedness and general lack of understanding surrounding these matters. We must first cultivate within ourselves a deep awareness of the problems, the serious challenges involved, and the potential solutions available. Only thereafter should we consider voting in a referendum, engaging in political decision-making, or participating in the process through other means. Before any decisions are taken, a comprehensive national debate on energy issues must take place». This is what Aurelio Peccei, president of the Club of Rome, said at a conference organized by ARCI (Italian Recreational and Cultural Association) on the theme *Ambiente ed energia: scelte energetiche e partecipazione popolare* (Environment and Energy: Energy Choices and Popular Participation; Messina, December 15-16, 1978)¹.

Thirty-eight years later, the Italians were once again called upon to express their views on energy policy in a climate characterized by yet another media and political short circuit that generated a misinformed and ideologized debate².

¹ Ezio Bussoletti, *Ambiente ed energia*. Bari: Dedalo, 1979, p. 46.

² The abrogative referendum held in Italy on April 17, 2016, represented a significant moment of public debate regarding the country's energy and environmental policies. The popular vote – promoted by two grassroots environmental movements (Coordinamento nazionale No Triv; Associazione A Sud Ecologia e Cooperazione Onlus) and nine Regional Councils (Basilicata,

Let us attempt to outline a brief energy portrait of Italy. From 1990 to today, the scenario has significantly changed. Regarding final energy consumption by households (Eurostat data), the use of petroleum products declined from 35.7% in 1990 to 7.6% in 2014, while renewable energy use rose from 2.4% to 19.7%. For households, the main energy source remains gas (44.1% in 1990; 51.3% in 2014), followed by electricity (17.4% in 1990; 18.7% in 2014). Electricity generated from renewable sources increased from 16.1% (2004) to 33.4% (2014) of total gross consumption. While this still lags behind countries like Norway (109.6%), Iceland (97.1%), Sweden (63.3%), Portugal (52.1%), and Latvia (51.1%), it places Italy ahead of Germany (28.2%), France (18.3%), and the United Kingdom (17.8%). Italy's progress in renewable energy is also evident when analyzing the percentage composition of final gross energy consumption. The share of energy consumed from renewable sources rose from 6.3% in 2004 to 17.1% in 2014, placing Italy ahead of other major European industrial countries (Spain 16.2%; France 14.3%; United Kingdom 15%; Germany 13.8%).

As for hydrocarbons, Italy has 867 producing wells: 512 on land (77% of the facilities are in Emilia-Romagna, Sicily, Tuscany, and

Calabria, Campania, Liguria, Marche, Molise, Puglia, Sardegna, Veneto) – aimed to repeal a legislative provision that allowed offshore hydrocarbon extraction activities within 12 nautical miles of the coast to continue beyond the original expiration date of the concessions, until the depletion of the deposits. The central issue at stake in the referendum concerned a key aspect of Italy's energy strategy: balancing the exploitation of fossil fuel resources in marine environments with the protection of coastal and marine ecosystems. Supporters of the «Yes» vote – backed by political forces such as the Movimento Cinque Stelle, Sinistra Ecologia Libertà (later Sinistra Italiana), the Greens (Federazione dei Verdi), and some factions of the Democratic Party – advocated for the imposition of time limits on extraction concessions, in line with broader goals of transitioning to renewable energy sources. Conversely, the government and other institutional actors adopted a low-profile stance, implicitly encouraging abstention in order to prevent the quorum from being reached. The referendum concluded with a turnout of 31.19%, well below the required quorum of 50% plus one of eligible voters. Although 85.85% of participants voted in favor of repealing the law, the insufficient participation rendered the referendum invalid, leaving the existing legislative framework unchanged.

Basilicata) and 355 offshore (324 in the Adriatic Sea and 31 in the Sicily Channel). These wells are connected to 119 offshore platforms, 91 land-based treatment plants, and 14 gas storage facilities. The hydrocarbon and industrial minerals extraction sector employs a total of 115,000 workers and generates a turnover of 21.5 billion euros. Proven reserves are estimated at 125 Mtep (million tons of oil equivalent), with «certain, probable, and possible» reserves estimated at 700 Mtep (Assomineraria data).

In the petroleum refining sector, there are 12 refineries (producing 71 million tons of crude oil and semi-processed products), which, together with their supply chain, employ 151,000 workers and generate a turnover of around 123 billion euros (data from the Oil Union).

There is no doubt that the processing of hydrocarbons is a polluting activity: effluents (hydrocarbons, phenols, sulfur compounds, sulfur and nitrogen compounds, petroleum residues, suspended substances) are generated from water used in processes, storage, and maintenance, as well as from distillation and conversion operations. Given the environmental impact, regulations require the oil industry to use numerous methods of reduction (solvent extraction, percolator filters, quartz sand filtration, flotation, etc.) to eliminate hydrogen sulfide, sulfur compounds, hydrocarbons, and phenols. To stay current, air quality in the Viggiano extraction site shows values within the standard (data published by the Basilicata Region refer to March 30, 2016): sulfur dioxide, 29.6 $\mu\text{g}/\text{m}^3$ (limit value: 125 $\mu\text{g}/\text{m}^3$); nitrogen dioxide, 4.6 $\mu\text{g}/\text{m}^3$ (limit value: 200 $\mu\text{g}/\text{m}^3$); carbon monoxide, 0.18 $\mu\text{g}/\text{m}^3$ (limit value: 10 $\mu\text{g}/\text{m}^3$); PM10 particulate, 11.7 $\mu\text{g}/\text{m}^3$ (limit value: 50 $\mu\text{g}/\text{m}^3$); ozone, 93 $\mu\text{g}/\text{m}^3$ (limit value: 180 $\mu\text{g}/\text{m}^3$). Regarding water quality: pH, 7.96 (values prescribed by regulations: between 6.5 and 9.5); biochemical oxygen demand, 1.93 $\mu\text{g}/\text{litre}$ (values between 2 and 8 indicate moderate pollution); phenols, 0.005 $\mu\text{g}/\text{litre}$ (limit value: 0.01 $\mu\text{g}/\text{litre}$). Additionally, the site produces (data for 2014, Eni) a significant amount of greenhouse gases (486,620 tons of CO₂ equivalent) and

waste (447,997 tons, of which 860 are hazardous). These data reveal how the oil industry generates significant externalities (i.e., costs not borne by the producer but by society at large), both local (pollution at the production site and surrounding areas) and global (greenhouse gas emissions).

Now, let's address the aspects of the referendum short circuit.

First: the ambiguities of environmentalism. For years in Italy, grassroots environmental movements have directed their actions against structures considered essential for making development sustainable and for meeting the goals set by international treaties such as those for reducing greenhouse gas emissions. In 2010-2011, protest episodes (author's elaborations based on Nimby Forum data) mostly involved plants for the production of electricity from renewable sources (45.64% of the total); waste management plants (27.33%); production and distribution of energy from non-renewable sources (20.64%); transportation infrastructure construction; and the construction of other infrastructure (2.32%). In 2014, the most contested sector remained the energy sector (64.12%), followed by waste (24.54%), transportation infrastructure (7.65%), and other infrastructure (3.69%). Protests were mostly directed against plants for the production of electricity from renewable sources (37.20%), followed by energy distribution plants (12.14%), hydrocarbon research/extraction projects (10.03%), landfills (10.03%), and waste-to-energy plants (8.18%).

Second: ignorance of the scientific context. The referendum proposal was also motivated by opposition to the use of compressed air emissions at sea (air guns) for geological surveys. During the discussion on the bill regarding environmental crimes, two parliamentary groups (Grandi Autonomie e Libertà; Forza Italia) even proposed imprisonment from «one to three years» for the use of the air gun technique in «marine research and inspection activities». This proposal sparked a strong protest from all the main research centers (Cnr, Conisma, Infn, Ingv, Ispra, Ogs, Sgi, Szn Anton Dohrn, Italian Section of Eage/Seg), which, in a letter signed by their respective presidents dated March 9, 2015,

pointed out the «numerous scientific inaccuracies» that emerged during the parliamentary discussion and the «blatant error» in attributing the ability of these techniques to induce seismicity.

Third: the political manipulation of the consultation. More than protecting the sea, the real stake seemed to be institutional. In fact, if the constitutional reform proposed by the Renzi government had been implemented, national energy transport and distribution policies would no longer have been «concurrent legislative matters» (Article 117 of the Constitution) but would have reverted to being «exclusive legislative matters» of the State.

In conclusion, some brief notes on the result. The failure to reach the quorum even in the regions with offshore drilling sites means that the majority of citizens were not interested in the nature of the consultation: after all, water pollution (not only marine) is a concern felt by 37.1% of individuals aged 14 and older³. The 85.85% support for «yes» demonstrates that two types of voters turned out: those more sensitive to the reasons of radical environmentalism and those who wanted to send an early signal in view of the constitutional referendum in October.

³ Istat, *Annuario statistico italiano 2015*. Roma: Istat, 2015, p. 68.

5. The Geopolitics of Global Energy: Trumpism, Western Displacement, and Competing Interests

The election of Donald Trump as the 45th President of the United States brought energy issues back to the forefront of public debate. The newly elected president has been identified as a key figure in the renewed vilification of climate policies, particularly following the publication of the America First Energy Plan on the White House website, which defines the production of natural gas and oil from shale and bituminous sedimentary rocks as a strategic priority¹. The Trump administration has also been regarded as a major obstacle to the implementation of the decisions adopted by the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC), held in Paris from 30 November to 11 December 2015.

In reality, the role of the United States and its current administration is not as decisive for the future of global energy and climate policies as it might seem. As far as energy is concerned, the alarm sparked by Trump's election must be weighed carefully and recognized for what it is, an episode in the broader political struggle between the establishment of Western countries and the

¹ Sara Vakhshouri, *The America First Energy Plan: Renewing the Confidence of American Energy Producers*. Washington, DC: Atlantic Council, 2017; Joshua Busby, Nigel Purvis, *US Climate Policy Under President Trump. Climate Leadership in Uncertain Times*. Washington, DC: Atlantic Council, 2018, pp. 4-7.

so-called populist movements². In public discourse, the alleged influence of Donald Trump has thus ended up overshadowing far more significant issues.

First and foremost, the prominence of fossil fuels in global energy policies cannot be attributed (solely) to the decisions of the United States. In 1990, global energy consumption was distributed as follows (author's elaboration based on data from EIA, IEA, and the World Energy Council): 84.82% fossil fuels (oil and derivatives, coal, natural gas), 9.46% renewable sources, and 5.72% nuclear energy. By 2016, fossil fuels still accounted for 82.62% of total consumption, compared to 12.66% from renewables and 4.72% from nuclear energy. Between 1990 and 2016, global energy consumption (measured in quadrillion BTUs; British Thermal Units, equivalent to approximately 252 calories) increased by 65.20%. Among energy sources, the greatest increase was in renewables (+121.01%), followed by coal (+81.22%), natural gas (+74.69%), oil and derivatives (+40.20%), and nuclear energy (+36.34%).

Formerly developing countries have replaced the early industrialized nations as the dominant energy consumers: the largest consumer in 2015 was China, followed by the United States, India, Russia, Japan, Germany, Brazil, South Korea, Canada, France, Iran, and Indonesia. The five Western countries consumed 3,433 Mtoe (million tonnes of oil equivalent) in 2015, compared to 5,751 Mtoe consumed by the other seven. Overall, 44.90% of global energy production is consumed in Asia, 27.09% in the Americas, 24% in Europe, and 4.01% in Africa.

Production is also increasingly concentrated in non-Western countries, particularly in Asia: the leading producer is China, followed by the United States, Russia, Saudi Arabia, India, Canada, Indonesia, Australia, Iran, Brazil, Nigeria, and the United Arab Emirates. Briefly considering future projections, fossil fuels are still expected to account for 78.23% of total energy consumption

² Tiziano Bonazzi, *Un populismo molto americano*, «il Mulino», 1, 2017, pp. 91-99; Víctor Pérez-Díaz, *Il sonno della ragione genera mostri*, «il Mulino», 1, 2017, pp. 174-179.

by 2040, with Asia remaining the largest consumer, accounting for 53% of global consumption.

These data serve to temper the role of the United States (and, more broadly, that of Western countries) in shaping global climate policy. What is often overlooked in public debate is the cumbersome and complex nature of the agreements reached through the climate change conferences, which, it is worth noting, have not been ratified by Russia or by key Western producer-consumer nations (such as the United States, Japan, Canada, and Australia). At the same time, emerging economies (including China and India) were exempted from binding commitments until 2020. Furthermore, the possibility that the 2015 Paris Agreements might be effectively implemented hinges on meeting two key demands from developing countries: the provision of substantial financial assistance and the definition of concrete objectives – among them, the effective transfer of technology and the creation of new global institutions – to mitigate the environmental, social, and economic impacts of climate change³. In short, despite the signing of COP21 in Paris, climate policy still largely falls into the category of «environmentalism on paper» – that is, little more than hypotheses set down in dozens of documents issued by supranational institutions.

Public debate – especially interventions from the political and economic establishment – also tends to underestimate the fact that some of the proposed remedies are proving counterproductive. This is particularly the case with biofuels, which have been promoted as a versatile and renewable energy source capable of delivering significant carbon savings compared

³ Carlo Carraro, *Il cambiamento climatico nella prospettiva dello sviluppo economico*, «Equilibri», 3, 2014, pp. 401-410; Carlo Carraro, Marinella Davide, *La difficile strada che passa per Parigi*, «Equilibri», 2, 2015, pp. 223-232; Viridiana Ammendola, Jacopo Crimi, *Venticinque anni di negoziati sul clima*, «Equilibri», 2, 2015, pp. 247-254; Rt Hon Chris Skidmore Obe Mp, Will Farrell, *Lessons From The Past. Towards A Better Future. A Brief History of the United Nations Climate Change Conferences: COPs 1-27*, «M-RCBG Associate Working Paper Series» (Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School), 219, October 2023.

to fossil fuels. In reality, recent studies – summarized, for example, in Greenpeace's report *How the Palm Oil Industry is Cooking the Climate* (November 2007) and in the Living Planet Report 2008 – have shown that «converting tropical forests, peatlands, savannahs, or grasslands into biofuel crop plantations can generate between 17 and 420 times more annual CO₂ emissions than the savings expected from using biofuels in the first place»⁴.

Two examples may serve to illustrate the complexity of the issue: the European Union's «20-20-20» plan (a 20% reduction in greenhouse gas emissions; an increase to 20% in the share of energy from renewable sources; and a 20% reduction in energy use compared to the baseline at the time the directive was launched in 2009) has had the unintended effect of shifting greenhouse gas emissions from the EU to certain Asian countries (notably Indonesia and Malaysia), exporters of vegetable oils also used in the production of biofuels⁵; meanwhile, the use of corn in biofuel production has created competition between energy and food uses of the crop, leading to public protests in Mexico, where maize is a dietary staple⁶.

Finally, in the public debate on energy issues, one should not underestimate the role of grassroots environmental movements, which – somewhat paradoxically – direct their opposition toward infrastructures that the scientific community considers essential for protecting both global common goods and local commons from the effects of climate change. In particular, grassroots environmental activism frequently targets renewable energy projects, even though their development is widely recognized as vital for reducing emissions produced by the so-called carbon economy. Some of the most well-known international examples include protests against the construction of two wind farms: one

⁴ Chris Hails, Sarah Humphrey, Jonathan Loh, Steven Goldfinger (eds.), *Living Planet Report 2008*. Gland, Switzerland: WWF. World Wide Fund for Nature, 2008, p. 30.

⁵ European Commission, *The impact of EU consumption on deforestation: Comprehensive analysis of the impact of EU consumption on deforestation. Final Report* (Technical Report-2013-063). Bruxelles: European Commission, 2013.

⁶ *La crisis de la tortilla mexicana*, «El Mundo», 31 January 2007.

in Nantucket Sound, Massachusetts, and the other in St. Lucie County, Florida.

Resistance to the construction of energy infrastructure has also become widespread across many European countries, reaching especially significant proportions in Italy, where more than 64% of protests led by civic committees have targeted the energy sector. The paradox lies in the fact that what this self-styled grassroots environmentalism claims to defend as the *environment* is not the natural environment – understood as «the set of physical, chemical, and biological conditions that define an open system in which exchanges of energy and information occur, capable of self-regulation and maintaining a dynamic equilibrium» – but rather the landscape, that is, territory that has been extensively altered by human intervention over time. In short, it refers to a particular conception of nature that does not coincide with the natural environment, but with areas that have been skillfully shaped by human hands and are thus regarded as expressions of an aesthetic value worthy of preservation.

In conclusion, attributing the dynamics that govern energy and climate policy to a single government in office (even that of a global superpower) is a distortion that hinders our understanding of the issues at stake, since such policies are the product of complex negotiations aimed at safeguarding the interests of a wide array of both local and global actors.

6. On a Fragile Balance: Nimby, Indigenous Peoples, and Environmental Justice

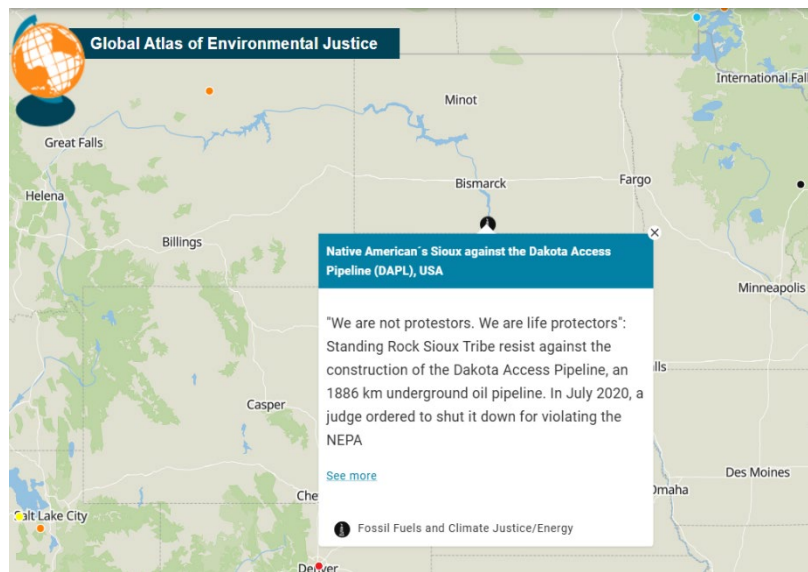
In the album *AKA Graffiti Man* (Ryko, 1992), John Trudell (activist of the American Indian Movement and singer-songwriter of Santee Sioux origin) sang: «With machines for ancestors/ new unborn generations/chemical umbilical chords are only wiring/ in your electrical progress/ human lives burnt offerings to the god greed/ with lies for ancestors/ There is no truth in some futures/ rulers of minds feeding next generation's souls/ to the control machine./ Sacrifice ritual for the proper technology/ with isolation for ancestors/ There is only the present bought by the credit material uses/ forging chains binding you to destruction/compliments of your deities/ the industrial priest» (*Rich Man's War*).

Trudell's song almost seems prophetic of what occurred in 2016 in the Standing Rock Reservation, inhabited by Hunkpapa Lakota, Sihasapa Lakota, and Yanktonai Dakota tribes, which spans two counties in North and South Dakota.

At the beginning of 2016, the tribes began their protest against a subterranean oil pipeline (Dakota Access Pipeline, 1,886 km long, costing \$3.78 billion) that would transport oil from the Bakken extraction fields in North Dakota to the Patoka storage center in Illinois¹. The project (which was about 87% completed)

¹ *Treaties Still Matter. The Dakota Access Pipeline* <https://americanindian.si.edu/nk360/plains-treaties/dapl> (Last accessed, May 2025); *The Dakota Access Pipeline* <https://eelp.law.harvard.edu/tracker/dakota-access-pipeline/> (Last accessed,

was criticized due to its potential environmental impact on water resources. As a result, residents of Bismarck (the capital of North Dakota) requested and obtained a diversion of the infrastructure away from their city. The engineers of the U.S. Army Corps of Engineers then modified the pipeline's route towards the Sioux Reservation, whose inhabitants, in response, initiated the Respect Our Water movement.



<https://ejatlas.org/conflict/dakota-access-pipeline>

This situation can be framed within the context of participatory experiences aimed against the construction of public infrastructure (transport routes, waste management facilities, energy production plants, etc.), which the scientific literature defines by acronyms such as Nimby (Not in My Back Yard) – with a negative connotation – and Lulu (Locally Unwanted Land Uses), a neutral term that is currently considered more appropriate². In

May 2025). Nick Estes, *Our History Is the Future: Standing Rock Versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance*. Chicago, Illinois: Haymarket Books, 2024.

² William R. Freudenberg, Susan K. Pastor, *Nimbys and Lulus. Stalking the Syndromes*, «Journal of social issues», 48, 1992, pp. 39-61; Andreas Schedler

this case, the selfish protest of Bismarck residents ultimately transferred the potential negative externalities generated by the pipeline onto the Native American community.

The reasons for the growing prominence of Nimby/Lulu participatory experiences are numerous and complex.

One of these is the perception of a widening gap between politicians and citizens, which negatively affects the assessment of the risks associated with the construction of new infrastructure.

A second reason lies in the perception of unequal distribution of costs and benefits: communities often oppose a facility because they judge the potential benefits to be much lower than the negative consequences (environmental impact, health risks, etc.).

A third reason is rooted in selfish concerns, such as fears of property value loss, a decline in quality of life, or a resistance to the invasion of a space perceived as, in some way, private. A fourth reason is the strong ideological component, as these localist movements draw from a tradition – that of the more radical groups in political ecology – where ideological dogmatism has always played a central role. The ideological element, therefore, seems to be used to erect barriers with the explicit intent of preventing (or limiting) a constructive dialogue with political decision-makers. These attitudes have not gone unnoticed by the keenest observers. Political scientist James R. Flynn refers to the most alarmed environmentalists as people who are naive in politics and economics, while anthropologist Bruno Latour expands the criticism to ecological thought, stating that it has not yet

(ed.), *The End of Politics? Explorations into Modern Antipolitics*. New York: St. Martin's Press, 1997; Gregory E. McAvoy, *Partisan Probing and Democratic Decisionmaking. Rethinking the Nimby Syndrome*, «Policy studies journal», 26, 1998, pp. 274-292; Christopher Rootes (ed.), *Environmental Movements: Local, National and Global*. London: Frank Cass, 1999; Maarten Wolsink, *Wind Power and the Nimby-myth. Institutional Capacity and the Limited Significance of Public Support*, «Renewable energy», 21, 2000, pp. 49-64; Carissa Schively, *Understanding the NIMBY and LULU Phenomena: Reassessing Our Knowledge Base and Informing Future Research*, «Journal of Planning Literature», 21, 2007, pp. 255-266.

developed new concepts, but rather has borrowed from other theories, combining them together³.

The case of the Dakota Access Pipeline – particularly the protest by the citizens of Bismarck – highlights the central issue surrounding Nimby/Lulu movements: do they represent new tools that can strengthen the democratic process, or are they, rather, forms of political action that end up questioning the legitimacy of the institutions themselves (which are considered instruments of oligarchies acting against the interests of citizens), distorting their role and devaluing their importance for the maintenance of a proper democratic dialectic?

This issue should not be underestimated, as Tony Judt warned that the State is the only forum in which it is possible to practice politics, understood as the appropriate form for expressing different collective preferences in open societies⁴. Nimby/Lulu committees, on the other hand, tend to challenge the role of the State and local institutions by questioning the legitimacy of decisions made by representative bodies, which they oppose by asserting what they believe to be the genuine will of the people they represent. This is a clear reversal of the principles of representative democracy, whose necessity Judt considered to be the best argument in favor of the State, as the two are destined to live or die together. Moreover, the hegemonization of environmentalism by localist movements risks confining it to the role of a social actor dedicated to defending selfish interests or uncritically supporting strongly ideologized and fundamentalist theories.

The temporary victory of the Standing Rock tribes (the outgoing president Barack Obama halted the construction of the pipeline, and the U.S. Army Corps of Engineers temporarily prohibited the pipeline's burial under Lake Oahe) does not resolve

³ James R. Flynn, *Senza alibi. Il cambiamento climatico: impedire la catastrofe*. Torino: Bollati Boringhieri 2015; Bruno Latour, *Nous n'avons jamais été modernes: essai d'anthropologie symétrique*. Paris: Éd. la Découverte, 1991.

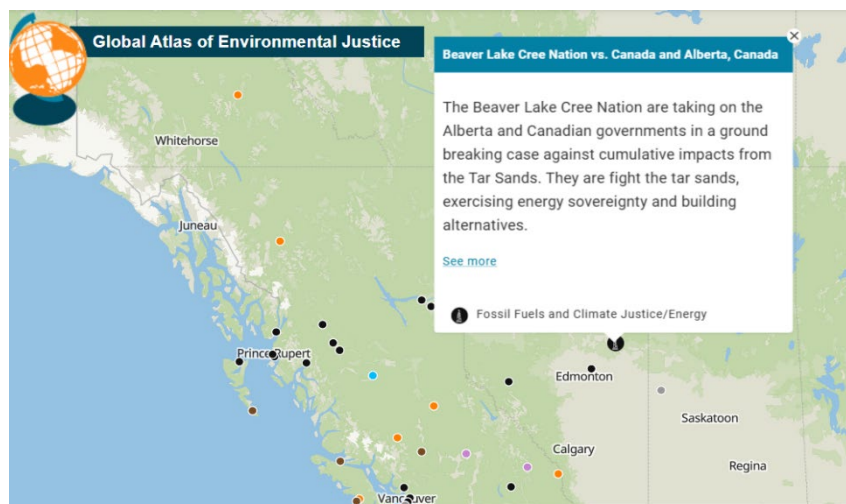
⁴ Tony Judt, *Reappraisals: Reflections on the Forgotten Twentieth Century*. London: Vintage Books, 2009.

the issue, as in any case, the pipelines will be diverted toward another territory, shifting the environmental risk onto other communities. The problems of the progressive deterioration of the quality of democracy and the crisis of representativity thus remain unchanged.

In the case of Standing Rock⁵, the situation is further complicated by the fact that Native Americans are one of the minority groups most exposed to environmental risks: their protest can be placed within the framework of the environmental justice movement (the term was first used in the United States in a report by the United Church of Christ's Commission for Racial Justice, Toxic Wastes and Race), according to which exposure to environmental harms (especially pollution and resource degradation) disproportionately affects weaker populations. The

⁵ Between 2020 and 2024, the legal and political controversy surrounding the Dakota Access Pipeline (DAPL) intensified. In 2020, a U.S. federal court ruled that the permit granted for the pipeline to cross Lake Oahe – a vital reservoir along the Missouri River – was invalid due to the absence of a comprehensive Environmental Impact Statement (EIS). Consequently, the court ordered Energy Transfer, the company operating the pipeline, to temporarily shut it down until the environmental review was completed. However, this ruling was later stayed on appeal, allowing the pipeline to remain operational despite ongoing legal uncertainty. With the inauguration of the Biden administration in 2021, the Standing Rock Sioux Tribe and allied environmental groups anticipated a firmer stance on DAPL. Although federal officials expressed concerns regarding the lack of tribal consultation, the administration did not mandate an immediate shutdown of the pipeline, instead deferring to judicial proceedings and regulatory assessments. From 2022 through 2023, the legal process moved forward slowly. Energy Transfer continued to pursue a permanent easement, while the Sioux and their supporters demanded a transparent and rigorous environmental review. The U.S. Army Corps of Engineers was tasked with conducting a new Environmental Impact Statement, but the process encountered significant delays. By 2024, the EIS remained in progress, and the pipeline continued to operate at full capacity, transporting up to 570,000 barrels of crude oil per day. Tribal leaders and environmental advocates persisted in their opposition, asserting that the pipeline posed an ongoing environmental risk and constituted a violation of Indigenous rights. In March 2025, a jury in the Mandan court in North Dakota ruled that the environmental NGO Greenpeace must pay \$660 million in damages (over € 600 million) to Energy Transfer.

issue of unequal ecological exchange was highlighted at the Earth Summit in Rio de Janeiro (1992) and the World Summit on Sustainable Development in Johannesburg (2002), where the link between social injustice and environmental injustice was identified, represented by the unequal exposure to environmental risks and the depletion of resources belonging to minorities and poor communities. For these reasons, the protest of the Sioux community has reinvigorated the project – however unrealistic – of a Native American nation: at the end of September 2016, around one hundred U.S. and Canadian tribes signed an alliance against the exploitation of tar sands (Treaty Alliance Against Sands Expansion⁶), claiming their millennial role in defending peace, friendship, and Mother Earth.



<https://ejatlas.org/conflict/beaver-lake-cree-nation-vs-canada-and-alberta>

⁶ The alliance was established through a formal inter-Indigenous treaty, grounded in Indigenous sovereignty and law. By signing the treaty, the Nations collectively agreed to prohibit the construction of any tar sands infrastructure across their territories and to support one another in resisting such developments. The Treaty Alliance specifically targets major pipeline projects like Keystone XL, Trans Mountain Expansion, Line 3, and Energy East, which are seen as dangerous to water sources, ecosystems, and Indigenous rights.

7. Navigating the Discourse: Some Reflections on Climate Change Literature

Summer 1985, the inner courtyard of a medieval castle in Tuscany. Enzo Tiezzi, professor of physical chemistry at the University of Siena, was fervently defending the arguments in his book *Tempi storici, tempi biologici* (Historical Times, Biological Times) against the widespread skepticism of his audience. The crowd's sarcastic – almost derisive – criticism targeted the synthesis he had presented in Chapter Seven, titled *Le quattro stagioni sono due* (The Four Seasons Are Two)¹.

What was Tiezzi talking about? He was discussing the *greenhouse effect* and projections concerning the rise in atmospheric CO₂, prior to the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988 by the United Nations Environment Programme and the World Meteorological Organization. A 1982 report by the National Academy of Sciences and the National Research Council had forecasted a temperature rise of about 3°C, estimating warming two to three times higher at the poles, especially in the Arctic, leading to melting ice and a shortening of

¹ Enzo Tiezzi, *Tempi storici, tempi biologici. La Terra o la morte: i problemi della nuova ecologia*. Milano: Garzanti, 1984.

spring and autumn². Essentially, Tiezzi was helping to introduce the climate change debate to Italy – a concept known at the time only within scientific communities, and which the public and media would only begin to engage with between the signing of the UN Framework Convention on Climate Change (UNFCCC) at the 1992 Earth Summit in Rio and the Kyoto Protocol (1997). At the Kyoto Conference of the Parties (COP), a binding treaty was signed for reducing greenhouse gas emissions³. The signatories – divided into Annex I (advanced economies and post-socialist countries) and non-Annex I (developing nations including Brazil, China, and India) – committed to a 5% reduction in anthropogenic emissions during the 2008-2012 period, compared to 1990 levels.

Over time, the agreement fell short of expectations. It bound only Annex I countries to modest reductions and was weakened by the United States' refusal to ratify it, as well as the exemption of the major transitional economies (China, India, and Brazil) from binding commitments. Following Kyoto – and as the public debate grew more polarized between denialists and those who supported scientific consensus – the COPs merely extended the Kyoto Protocol (2011) for another seven years and tasked the Paris COP 21 (30 November-11 December 2015) with crafting a binding treaty. The political failure of climate negotiations stems not only from the cumbersome UNFCCC diplomacy – where each document must smooth tensions among divergent national interests – but also from underperforming media (often influenced by denialist sponsors), a

² CO2 Climate Review Panel, *Carbon Dioxide and Climate: A Second Assessment*. Washington DC: National Academy Press 1982.

³ On the Kyoto Protocol see Linda Maria Spielmann, *Multilateral Environmental Agreements in Global Governance: Organisational Dynamics and Authority Expansion*. Abingdon, Oxon; New York, NY: Routledge, 2025; Wytze van der Gaast, *International Climate Negotiation Factors: Design, Process, Tactics*. Cham: Springer International Publishing, 2017; David G. Victor, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*. Princeton: Princeton University Press, 2001.

growing disconnect between politics and science, and the lack of conceptual tools allowing ecology to formulate a politics of the future⁴.

Within this context, COP 21 in Paris – overshadowed by media coverage amplified by the 13 November 2015 terrorist attacks – fulfilled its role without breaking tradition. Delegates reached a legally binding agreement (as declared by French Foreign Minister Laurent Fabius), but one that was significantly weakened by the voluntary nature of national commitments (Intended Nationally Determined Contributions, INDCs) and by the absence of robust monitoring and sanction mechanisms. Notably, current state pledges (as expressed in their INDCs) project a temperature rise of 2.7-3.5°C by century's end surpassing the Paris Agreement's stated goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C, recognizing that this would significantly reduce risks and impacts.

The outcome of COP 21 sparked mixed reactions. Some observers emphasized the value of including developing nations (non-Annex I countries) in the agreement. Others expressed deep skepticism about the feasibility of meeting the 2°C threshold and about the mechanisms in place, particularly the non-binding five-year review cycles for emissions targets, which appear quite fragile in today's geopolitical landscape.

To grasp the current state of the climate issue without delving into the IPCC's complex reports (available at <http://www.ipcc.ch>), several accessible books have emerged alongside the media spotlight on COP 21. Zanichelli has republished *Le stranezze del clima*, a concise volume in the *Chiavi di lettura* series that clearly explains the scientific debate, ongoing environmental changes,

⁴ Stefania Ferrando, *Una politica dell'avvenire. Conversazione con Bruno Latour*, «Equilibri», 2, 2015, pp. 335-345; Furio Cerutti, *Polemiche climatiche*, «il Mulino», 6, 2015, pp. 1125-1131.

possible future scenarios, and policy options for mitigating the negative effects of climate change, ideal for students and newcomers⁵.

James R. Flynn's *Senza alibi* offers a compelling analysis. A professor emeritus of political studies at the University of Otago, New Zealand, and former lecturer at Stanford and Princeton, Flynn outlines a plan emphasizing: the promotion of climate engineering to halt ice melt and methane release; the necessity of sidelining politics, deemed incapable of forging a community of intent; and the urgency of excluding both skeptics (whom he labels declared enemies of humanity) and radical environmentalists (politically and economically naïve individuals who fail to grasp that even leading climate scientists have given up hope). He argues for a shared strategy capable of garnering broad international consensus⁶.

Lastly, *Il clima che cambia* by Carlo Carraro and Alessandra Mazzai presents an institutional perspective. Carraro, an economics professor at Ca' Foscari University and one of six vice-chairs of the IPCC Working Group III (focused on mitigation), also chairs the Advisory Board of the Green Growth Knowledge Platform and serves as scientific director of the Enrico Mattei Foundation. Unsurprisingly, the authors consider climate change not yet uncontrollable (echoing the UNFCCC's stance), provided it is addressed with the awareness that it is not merely an ethical or environmental concern but one of the most pressing economic problems. They advocate for radical transformation of energy systems, consumption habits, and production methods through policies (deemed *feasible* and *reasonably priced*) aimed at replacing the carbon economy with a green economy. Central to this shift, they argue, is assigning a price to air quality, today's most scarce

⁵ Climate Central, *Le stranezze del clima: che cosa sta cambiando, e perché*. Bologna: Zanichelli, 2013.

⁶ James R. Flynn, *Senza alibi. Il cambiamento climatico: impedire la catastrofe*. Torino: Bollati Boringhieri, 2015.

resource, yet still valueless. They optimistically assert that if each unit of greenhouse gas emitted had a price, emitters would factor it into their economic and investment decisions, making emission reductions both inevitable and progressive⁷.

⁷ Carlo Carraro, Alessandra Mazzai, *Il clima che cambia. Non solo un problema ambientale*. Bologna: il Mulino, 2015. The following books are outstanding examples of internationally popular literature, built on a foundation of scientific knowledge: Naomi Klein, *This Changes Everything: Capitalism vs. the Climate*. New York: Simon & Schuster, 2014; Ramón Fernández Durán, Luis González Reyes, *En la espiral de la energía* (Vols. 1 and 2). Madrid: Libros en Acción, 2014; David Wallace-Wells, *The Uninhabitable Earth: Life After Warming*. New York: Tim Duggan Books, 2019; Christophe Cassou, Valérie Masson-Delmotte, *Parlons climat en 30 questions*. Paris: Documentation Française, 2023.

8. Warming the World, Dividing the Discourse: Between Scientific Alarm, Cultural Denial, and Political Paralysis

In 2007, the United Nations Development Programme (UNDP) endorsed the findings of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), asserting that «climate change generates risks not only for the world's poor, but for the entire planet and for future generations. The path we have embarked upon is a one-way road toward ecological catastrophe. [...] There is a palpable sense that time is running out. Climate change represents a challenge to be addressed throughout the twenty-first century. [...] Greenhouse gas concentrations are rising, driven by increasing emissions. [...] The window of opportunity for effective mitigation is closing. [...] In a field characterized by high levels of uncertainty, one certainty remains: if the next decade resembles the past one, the world will inevitably head toward the avoidable scenario of a dual catastrophe: reversals in human development in the short term and the risk of ecological disaster for future generations»¹.

For the first time, the international scientific community was in agreement that, should the average global temperature rise by

¹ *Lo sviluppo umano. Rapporto 2007-2008. Resistere al cambiamento climatico*, Torino: Rosenberg & Sellier, 2007, pp. 45-48 [orig. ed. *Human Development Report 2007-2008. Fighting Climate Change: Human Solidarity in a Divided World*. Houndmills, Basingstoke, Hampshire and New York: Palgrave Macmillan, 2007].

more than 2°C, many areas of the planet would experience alarming negative effects due to the micro-level interactions between global warming and existing climatic regimes.

The United Nations Development Programme identified five specific risk multipliers for the reversal of human development: «reduced agricultural productivity, increased water insecurity, greater exposure to coastal flooding and extreme weather events, ecosystem collapse, and heightened health risks». According to the UN agency, under such a scenario, millions of people in Africa (between 75 and 250 million) would face chronic water scarcity and recurring food crises as a result of soil aridification and collapsing agricultural yields. In addition, sea level rise would impose adaptation costs on coastal states amounting to between 5 and 10 percent of their gross domestic product.

In Asia, the availability of freshwater would decline, while the risk of flooding in the large delta regions would increase significantly. In Oceania, there would be a substantial loss of biodiversity – most notably affecting the Great Barrier Reef and the Australian tropical rainforest ecosystems – alongside invasions of non-native species, declining agricultural yields, worsening of already frequent water crises, and the progressive submersion of vast coastal areas on small islands.

In Central and South America, the tropical rainforest would be gradually replaced by savanna, particularly in the eastern Amazon, and semi-arid regions would experience progressive desertification. Furthermore, the disappearance of glaciers would lead to a significant reduction in water availability for human consumption, agriculture, and energy production.

In North America, reduced snowfall would result in increasing difficulties in water supply, and heatwaves – already affecting many cities – would become more frequent and intense. In some northern areas, moderate environmental changes could contribute to improved agricultural yields (by between 5 and 20%).

In Europe, southern regions would experience increasingly high temperatures and prolonged drought seasons, reducing both

water potential and agricultural productivity. Alpine ecosystems, profoundly affected by the retreat of glaciers, would suffer significant biodiversity loss. In central and northern parts of the continent, the frequency and severity of flood events would intensify. As for the polar regions, the shrinking thickness and extent of ice cover would bring about a radical transformation of ecosystems, threatening the survival of numerous species of migratory birds, marine mammals, and large predators.

The UNDP report, in essence, constituted a political acknowledgment of the controversial hockey stick theory: a climate curve that demonstrated how global temperature variations, which had remained relatively stable until 1850, began to rise sharply in the second half of the nineteenth century, coinciding with the spread of the Second Industrial Revolution and, consequently, the increasing use of fossil fuels².

The hockey stick theory was also corroborated by a series of ice core samples taken at the Vostok station in Antarctica, which indicated a rise in atmospheric CO₂ concentrations starting from the period 1750-1800. According to these measurements, the concentration of carbon dioxide increased from 280 parts per million (ppm) in 1800 to 350 ppm in 2000, while methane levels rose from 800 to 1800 parts per billion³.

In public discourse, the state of the planet's ice has thus become the principal paradigm for assessing the Earth's climatic health: from the five mass extinctions of the Phanerozoic (presumably caused by global cooling phenomena and occurring respectively at the end of the Ordovician, Devonian, Permian, Triassic, and Cretaceous periods), to the succession of glacial and interglacial cycles (from around 600,000 years ago to 12,000 BCE), to the *Little Ice Age* that began in the mid-16th century and ended in the second half of the 19th century, and finally to the global warming

² Michael E. Mann, Raymond S. Bradley, Malcolm K. Hughes, *Global-scale Temperature Patterns and Climate Forcing Over the Past Six Centuries*, «Nature», 392, 23 April 1998, pp. 779-787.

³ Jean Robert Petit, Jean Jouzel, Dominique Raynaud, *Climate and Atmospheric History of the Past 420,000 Years from the Vostok Ice Core, Antarctica*, «Nature», 399, 3 June 1999, pp. 429-437.

characterizing the current geological epoch. The alternation, in Earth's climatic history, between greenhouse periods and glacial phases (paleoclimate scholars speak of «greenhouse Earth» and «icehouse Earth») continues to fuel an ongoing debate between those who consider current climate warming a natural phenomenon and those who attribute it to human activities.

Within the Italian-translated literature, a skeptical perspective can be identified, chiefly represented by authors such as Bjorn Lomborg and Wolfgang Behringer. The latter argues that «the Earth will continue to warm even if all countries in the world were to behave exemplarily and drastically reduce their emissions», and that the Neolithic Revolution and the rise of the first civilizations «occurred during periods when the climate was slightly warmer than today». Therefore, if the current data on global warming are correct, «we will once again reach those values over the course of this century». At that point, according to Behringer, «the Alpine glaciers will melt, but not those in Antarctica», and thus «we will save on heating and burn less fossil fuel». These arguments serve Behringer's broader claim that the climate has «always changed», and support his caution not to «leave the interpretation of climate change in the hands of those who know nothing of the history of civilization»⁴.

There is also the politically correct current of thought, whose leading figure is Pascal Acot. In his *Climate Catastrophes and Social Disasters*, Acot raises doubts about the work of the IPCC, a powerful institution whose reports are also approved by countries that are «major consumers and producers of oil», and which «suffer from a lack of quality» in that they «lose nuance in exchange for synthetic information»; about the environmentalist movement, which he accuses of overestimating nature and undervaluing humanity; and about neoliberalism, claiming that «the so-called 'free-market' economy oppresses more than half of

⁴ Wolfgang Behringer, *Storia culturale del clima: dall'era glaciale al riscaldamento globale*. Torino : Bollati Boringhieri, 2016, pp. 288-289 [orig. ed. *Kulturgeschichte des Klimas: von der Eiszeit bis zur globalen Erwärmung*. Munchen: Beck, 2007].

humanity with poverty, disease, and lack of education». These premises serve to support the author's call for an undefined «ecology of human liberation» capable of resisting «the fatal irrationality of the current world order»⁵.

Finally, there are the tireless advocates of climate action, the most recent of whom is Peter Wadhams. Although he voices concerns about the effectiveness of the United Nations Framework Convention on Climate Change (UNFCCC), the author argues for the necessity of a *call to arms* to identify a method for removing carbon dioxide from the atmosphere. While awaiting such a technological breakthrough, Wadhams urges every individual citizen to «respond to the flood of mud [...] that flows from climate change deniers», to adopt «every possible measure to reduce energy waste, particularly the use of fossil fuels», to pressure governments to change their energy policies, and not to fear nuclear energy, which he describes as «a truly powerful base-load energy source capable of keeping our lights on without carbon emissions». In short, the *call to arms* appears to be little more than the familiar rhetoric that characterizes a certain strain of mainstream environmentalism⁶.

⁵ Pascal Acot, *Catastrofi climatiche e disastri sociali*. Roma: Donzelli, 2007, pp. 69-72, 135-137, 145 [orig. ed. *Catastrophes climatiques, désastres sociaux*. Paris: Presses universitaires de France, 2006]

⁶ Peter Wadhams, *Addio ai ghiacci: rapporto dall'Artico*. Torino: Bollati Boringhieri, 2017 [orig. ed. *A Farewell to Ice: A Report from the Arctic*. London: Allen Lane, 2016].

Part III

Resources, Animals, and Cultures



9. When Environmentalism Turns Into Farce: Ethical Hygiene and the Water Scarcity Crisis

Recently, newspapers and television have given extensive coverage to the so-called «unwashed movement»: a new environmentalist trend aimed at reducing consumption and water pollution through ethical hygiene. This lifestyle limits showers (or baths) and rejects the use of chemical products for body care. In Italy, it is supported by figures from radical-naïve environmentalism, such as the writer-mountaineer Mauro Corona and the former president of WWF, Fulco Pratesi¹.

Beyond general references to degrowth theory and the tradition of critical consumption, this movement promotes a form of environmentalism that, paradoxically, ends up trivializing a very serious issue – namely, the exploitation of water resources – and frames it as a matter of supposed ethical superiority rather than offering concrete solutions. The unwashed proposal borders on the absurd because domestic consumption historically represents only a modest fraction of total water use: in the year 1700, 90% of the water extracted was used for irrigation, 2% for manufacturing activities, and 8% for household purposes. Two centuries later, in 1900, household use accounted for 3%, while 90% was allocated to agriculture and 7% to industrial uses. By 2000, agriculture remained the main water-consuming human activity, with 66% of the total, compared to 25% for industry and 9% for the civil sector.

¹ *Lavarsi o meno senza sapone: la moda dell'igiene etica* [Washing Without Soap: The Rise of Ethical Hygiene], «Corriere della Sera», 23 April 2017.

Let us try to look beyond yet another misleading storytelling. The Earth has approximately 1,400 million cubic kilometers of water². Freshwater represents 2.5% of the total, or about 35 million cubic kilometers, of which only 0.3% is contained in rivers, lakes, and the atmosphere. The remaining portion is found in glaciers and polar ice caps (24.4 million cubic kilometers, 69.7%) and underground (10.5 million cubic kilometers, 30%). Humans primarily use water that falls to the ground in the form of precipitation. On average, the annual volume of precipitation is 119,000 cubic kilometers, of which 62% evaporates into the atmosphere and the remaining 38% (45,000 cubic kilometers) contributes to feeding surface water bodies and underground aquifers. Of these resources, only 20-30% (9,000-14,000 cubic kilometers) is accessible at affordable costs.

Currently, the global average withdrawal is about 3,800 cubic kilometers (633 cubic meters per capita) of freshwater: 70% for agricultural activities, 20% for industrial activities, and 10% for domestic use. Of these 3,800 cubic kilometers, Asia consumes 2,148 (631 cubic meters per capita), North America 525 (1,663 cubic meters per capita), Europe 400 (581 cubic meters per capita), the Middle East and North Africa 325 (807 cubic meters per capita), South America 164 (474 cubic meters per capita), sub-Saharan Africa 113 (173 cubic meters per capita), Central America and the Caribbean 101 (603 cubic meters per capita), and Oceania 26 (900 cubic meters per capita).

Regarding sectoral use, agriculture is the main consumer of water in sub-Saharan Africa (88%), the Middle East and North Africa (86%), Asia (81%), Central America and the Caribbean (75%), Oceania (72%), and South America (68%). In Europe and North America, however, industrial activities account for the

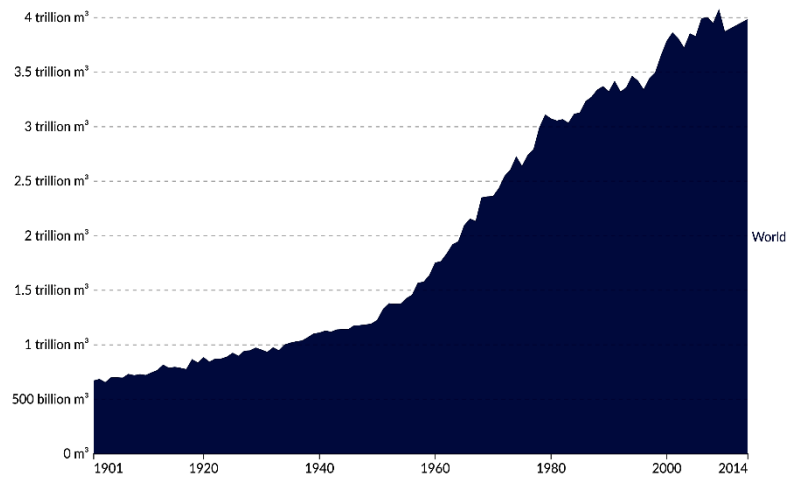
² For a comprehensive overview of the data, refer to the reports: Robin Clarke, Robert Lamb, Dilys Roe Ward (eds.), *Global Environment Outlook 3. Past, Present and Future Perspectives*. London-Sterling, VA: Earthscan Publications (United Nations Environment Programme), 2002, pp. 150-179; Paul Ekins, Joyeeta Gupta, Pierre Boileau (eds.), *Global Environment Outlook Geo-6. Healthy Planet, Healthy People*. Cambridge-New York: Cambridge University Press (UN Environment), 2019, pp. 235-269.

largest share of water consumption: 52% and 48%, respectively (agriculture 33% and 38%).

Global freshwater use over the long-run

Our World
in Data

Global freshwater withdrawals for agriculture, industry and domestic uses since 1900, measured in cubic metres (m³) per year.



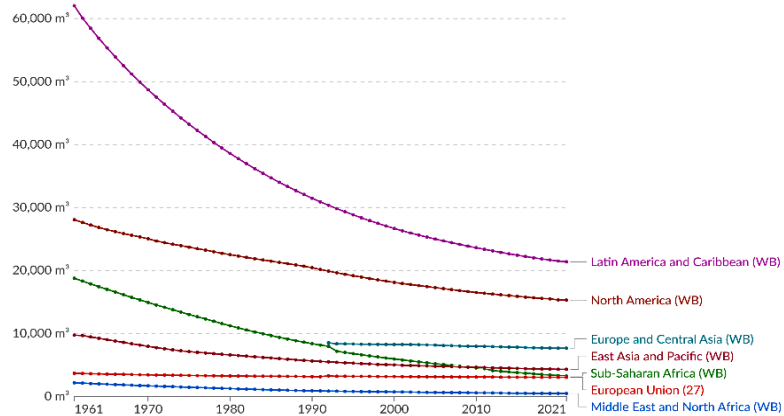
Data source: Global International Geosphere-Biosphere Programme (IGB)

OurWorldinData.org/water-use-stress | CC BY

Renewable freshwater resources per capita

Our World
in Data

Renewable internal freshwater resources flows refer to internal renewable resources (internal river flows and groundwater from rainfall) in the country.



Data source: Food and Agriculture Organization of the United Nations (via World Bank) (2025)

OurWorldinData.org/water-use-stress | CC BY

To measure the problems related to water exploitation, we can refer to the concept of water footprint³ in consumption and production: each country has an internal water footprint (the amount of water required to produce goods and services consumed domestically) and an external one, which refers to the water used in the production of goods in the exporting country. The water footprint of production – the total amount of water used for domestic, industrial, or agricultural purposes in a country, regardless of where the products are ultimately consumed – consists of green water (the volume of rainfall stored in the soil that evaporates from crops), blue water (freshwater extracted from water bodies that is used and not returned), and grey water (the volume of water polluted as a result of production processes). Between 1997 and 2001, the water footprint of production was approximately 9,000 cubic kilometers: 59% green water, 29% grey water, and 12% blue water. To give a quantitative idea of the water volumes used in production processes, consider that producing a cotton T-shirt requires 2,900 liters of water, 15,500 liters for one kilogram of beef, 3,000 liters for one kilogram of rice, and 1,500 liters for one kilogram of cane sugar.

Due to anthropogenic pressure, only 21 of the 177 major rivers in the world reach the seas. Among the ten longest rivers, the Danube, the Río de la Plata, and the Saluen are deeply altered by infrastructures built along their courses; the Rio Grande/Rio Bravo and the Ganges have become nearly extinct due to excessive water extraction and suffer the harmful effects of the saltwater wedge; the Yangtze River is severely degraded due to pollution; the ecosystems of the Murray and Mekong Rivers are compromised, respectively, by invasive species and overfishing. Additionally, the Indus and the Nile-Lake Victoria system are threatened by climate change, as the flow of the former is highly dependent on the retreating Himalayan glaciers, while the latter is particularly sensitive to temperature increases due to the high

³ Regarding the water footprint see <https://www.waterfootprint.org/>; Arjen J. Hoekstra, *The Water Footprint of Modern Consumer Society*. London-New York: Routledge, Taylor & Francis Group, 2020.

evaporation rates. Over-exploitation of surface water resources is a common issue in regions characterized by intensively irrigated agricultural systems (such as the great plains of North America, northern China, and South Asia) and areas with high population density and productivity. For example, the Orange River now has an annual flow lower than the amount of water stored in reservoirs along its course, while the Yellow River experiences a water withdrawal rate of 90%, to the extent that, in 1997, it was completely dry from the mouth to 600 kilometers inland.

Currently, many countries are experiencing water stress, meaning they have an availability of water that is slightly higher, equal to, or lower than 1,700 cubic meters per person per year, which is considered the threshold necessary to meet various consumption needs. The Middle East and North Africa are the regions where water scarcity is most severe. Water stress also affects countries such as South Korea, India, Pakistan, Belgium, Denmark, Germany, and Poland. According to UNICEF and the World Health Organization, about two billion families live below the so-called «water poverty line», as they have an average of 20 liters per day, which they must obtain from a water source located within one kilometer of their homes. In the coming decades, the water crisis is expected to intensify: the UNDP estimates that between 2000 and 2050, water demand could increase by 147%, with peaks of 508% in South Asia and 500% in sub-Saharan Africa.

Scarcity has led to conflicts over water resource management, which, in some cases, have escalated into actual wars⁴. One of the most well-known cases is the 1967 conflict between Israel and

⁴ On water-related conflicts, see Diane Raines Ward, *Water Wars: Drought, Flood, Folly, and the Politics of Thirst*. New York: Riverhead Books, 2002; Jerome Delli Priscoli, Aaron T. Wolf, *Managing and Transforming Water Conflicts*. Cambridge-New York: Cambridge University Press, 2009; Anton Earle, Anders Jägerskog, Joakim Öjendal (eds.), *Transboundary Water Management: Principles and Practice*. London-Washington D.C.: Earthscan, 2010; Fred Pearce, *When The Rivers Run Dry: Water, the Defining Crisis of the Twenty-First Century*. Boston, Massachusetts: Beacon Press, 2018; Luisa Cortesi, K.J. Joy (eds.), *Split Waters: The Idea of Water Conflicts*. London-New York, NY: Routledge, Taylor & Francis Group, 2021.

Syria, Egypt, and Jordan. One of the reasons for the confrontation can be traced back to the construction of the National Water Carrier, the Israeli water system that diverted a significant portion of the Jordan River's waters to its territory. In response, the Arab League began constructing channels to divert some of the Jordan River's tributaries. During hostilities, Israel destroyed the channels, a Syrian dam under construction, and took control of fertile and water-rich territories. Another case involves the contested waters of the Tigris and Euphrates rivers between Turkey, Syria, and Iraq. In the 1970s, the construction of Syria's Tabaqa Dam nearly led Iraq to declare war on Syria; in 1988, Syria amassed its troops along the Turkish border, initiating a form of undeclared, ongoing warfare; in 2002, Iraq strongly contested Turkey's water projects (especially the Atatürk Dam, which began operation in 1992), condemning them as a serious violation of international law⁵.

The report *The Age of Consequences* by the Center for Strategic and International Studies (CSIS) hypothesizes that, due to global warming, water scarcity could worsen, potentially affecting two billion people with an average temperature increase of 2.6°C. In this scenario, the UNDP believes that managing water resources in a manner similar to the current model could pose a real threat to human development, as it would make the further contraction of surface water resources and a significant deterioration in water quality more likely. For these reasons, the CSIS report deems it probable that the progressive worsening of environmental emergencies could foster the emergence of conflicts, ranging from localized disputes to full-blown wars⁶.

⁵ Hussein A. Amery, Aaron T. Wolf (eds.), *Water in the Middle East: A Geography of Peace*. Austin: University of Texas Press, 2000; Muserref Yetim, *Negotiating International Water Rights: Natural Resource Conflict in Turkey, Syria and Iraq*. London: I.B. Tauris, 2016.

⁶ Kurt M. Campbell et. al., *The Age of Consequences: The Foreign Policy and National Security Implications of Global Climate Change*. Washington, DC: Center for Strategic & International Studies/Center for a New American Security, 2007.

10. Fur, Flesh, and Fury: How Animals Became the New Ideological Battlefield

Animals, especially domesticated ones, have become an increasingly divisive topic, as their progressive anthropomorphization fuels an ever more heated debate¹.

In *The End of History and the Last Man*, Francis Fukuyama criticizes the egalitarian passion that denies any meaningful difference between human beings and higher animals as a form of hypocrisy rooted in anthropocentric environmentalism, a worldview that seeks to «protect baby seals and other animals because we humans like having them around»². In his view, if there is no rational basis for affirming that human beings possess a dignity superior to that of nature, then there is likewise no rational basis for claiming that one part of nature – such as animals – has greater dignity than another part, such as bacteria or viruses

¹ Valerio Pocar, *Gli animali non umani: per una sociologia dei diritti*. Roma-Bari: Laterza, 2005; Francesca Rescigno, *I diritti degli animali: da res a soggetti*. Torino: Giappichelli, 2005; Carol Freeman, Elizabeth Leane, Yvette Watt, *Considering Animals: Contemporary Studies in Human-Animals Relations*. Burlington: Ashgate, 2011; Attilio Pisanò, *Diritti deumanizzati: animali, ambiente, generazioni future, specie umana*. Milano: Giuffrè, 2012; David N. Pellow, *Total Liberation: The Power and Promise of Animal Rights and the Radical Earth Movement*. Minneapolis: University of Minnesota Press, 2014; Giulia Guazzaloca (ed.), *La relazione umani-animale: storia, problemi, sfide*. Bologna: il Mulino, 2019.

² Francis Fukuyama, *La fine della storia e l'ultimo uomo* [orig. ed. *The End of History and the Last Man*. New York: The Free Press, 1992]. Milano: RCS Libri, 2003, pp. 310-313.

(including those harmful to humans). Thus, Fukuyama considers the «extremist fringe of the environmentalist movement» to be more logically consistent, insofar as it holds that *nature as such* has rights equal to those of human beings. However, he also regards this consistency as the foundation of a radical ecocentrism capable of undermining not only Western civilization, but humanity as a whole. As he points out, this perspective may foster indifference toward mass deaths caused by famine – seen as nature’s way of punishing humankind for overstepping its bounds – or give rise to convictions such as the belief that «the human population must return to a natural level of one hundred million or so in order not to disrupt ecological balance».

More recently, writing in the «Corriere della Sera», political scientist Angelo Panebianco dismissed animal rights advocacy as the product of a cultural regression associated with the secularization of Western societies. According to Panebianco, de-Christianization has neither eliminated superstition nor made «Europeans more rational». An «impressive» example, he claims, is the «legions» of those «who seriously believe there are no differences between humans and animals»³.

Doubts regarding the relationship between humans and domesticated animals are not limited to conservative thought; the animal rights movement itself is deeply divided. In 2015, Gary Francione and Anna Charlton, both professors at Rutgers School of Law in Newark, published *Animal Rights*⁴ which brought renewed attention to the abolitionist perspective, a theory asserting that all sentient beings have a fundamental right not to be treated as property. From this premise follows the call for a complete abolition of the institutionalized exploitation of animals: in other words, this theory maintains that humans should cease domesticating animals (including pets), even if this leads to the extinction of domesticated species. The third principle of the

³ *I terroristi non sono folli, ma soldati del terrore*, «Corriere della Sera», 3 January 2017.

⁴ Gary L. Francione, Anna Charlton, *Animal Rights: The Abolitionist Approach*, Newark: Exempla Press, 2015.

theory asserts that veganism is a moral cornerstone and the foundation of a rational defense of animal rights⁵. In an interview with James McWilliams for the *Virginia Quarterly Review*⁶, Francione declared that «domestication is no longer morally acceptable» and stated his opposition «to the continued production of domesticated non-humans for any purpose whatsoever. This includes using dogs to guide the blind, detect bombs or drugs, and using primates to assist people in wheelchairs».

In essence, the abolitionist approach opposes the traditional animal protection model that has defined animal rights since the 19th century, beginning with the founding of the Society for the Prevention of Cruelty to Animals in London in 1824. That organization's primary goal was to instill public awareness of the cruelty often inflicted on animals. After securing a series of successful prosecutions for acts of cruelty, the organization gained increasing prestige, and in 1840 it was granted the right to call itself the Royal Society for the Prevention of Cruelty to Animals.

Over time, the animal rights movement developed comprehensive theories of animal citizenship, such as the one proposed in *Zoopolis* by political philosopher Will Kymlicka and independent scholar Sue Donaldson⁷. Drawing on ideas originally articulated by Jeremy Bentham in *An Introduction to the Principles of Morals and Legislation* (1789) and Henry Salt in *Animal Rights* (1892), Kymlicka and Donaldson argue that the solution to the challenges of the human-animal relationship lies not in ending domestication, but in fully integrating animals into civil society. Assuming animals are capable of participating in social life, the authors envision a new social model in which humans would ensure animals access to proper nutrition, healthcare, and even

⁵ For more information on this approach, the following website is available online: <https://www.abolitionistapproach.com/>.

⁶ Reprinted in Italy in «Internazionale» no. 1184 (2016) under the title *Potere animale*.

⁷ Will Kymlicka, Sue Donaldson, *Zoopolis. A Political Theory of Animal Rights*, Oxford: Oxford University Press, 2011.

political representation. Animals, for their part, could be subject to forms of relative isolation or rehabilitation programs in response to antisocial behavior. According to Kymlicka and Donaldson, such a reorganization of society would not prohibit humans from using animals in appropriate ways thus, horseback riding, shearing sheep, or plowing fields with oxen would not be seen as violations of animal-citizen rights.

The theory's exposition, published in «Internazionale», sparked a strong reaction from the vegan movement. The website veganzetta.org responded with an article titled *Impotenza animale* (February 9, 2017), in which the author (Danilo Gatto) writes: «The form of animal citizenship conceived by the authors of Zoopolis leaves untouched the power of those pillars of capitalist society that turn Animals into commodities. No repressive institution, no form of economic or political centralization is challenged. Rather than Animal Power, we are witnessing the reinforcement of animal impotence in the face of yet another anthropocentric attempt to deny the non-human. The danger of such a perspective lies not only in its content, but in how easily it could take root in the social imaginary; human society may already be prepared to embrace such a transformation (albeit slowly and incrementally), precisely because there is no significant force standing in its way. How the issue of animals is framed depends above all on who is doing the framing. The absence of a politically prepared and determined front guarantees only a 'partial' liberation of the Animal. Whether anti-speciesism aligns with this 'half' revolution is a question that must be addressed in the immediate future. One thing is certain: to weaken such a radically subversive idea – one that could challenge and transform the entire world – would be an unforgivable mistake».

What often goes unnoticed is a rather simple truth: no matter how radical or ecocentric a theory may be, it remains a product of human thought and therefore inevitably bears an anthropic imprint. The debate between speciesism and anti-speciesism concerns, and could only concern, the human species, the only one capable of formulating and engaging with complex ideas. Both

positions, in this sense, are cultural constructions that express opposing visions of the human-animal relationship, and neither is free from the defense of economic interests, however conflicting or irreconcilable they may be. What is particularly striking about the abolitionist approach (and veganism in general) is its moral absolutism, which increasingly tends to transform ecocentrism into a form of eco-authoritarianism.

11. Ecology in Japanese Anime Narratives

Between the second half of the 1980s and the early years of the following decade, the environmental movement in Italy assumed the dimensions of a mass phenomenon.

This shift was driven by several converging factors: the increasing public visibility of ecological issues (catalyzed by the publication of *Silent Spring* by Rachel Carson in 1963 and *The Closing Circle* by Barry Commoner in 1972, as well as the widespread media attention to the *Limits to Growth* report); the progressive worsening of environmental conditions in urban areas (including water and air pollution, a shortage of public green spaces, and the construction of peripheral neighborhoods lacking even the most basic sanitation infrastructure); and, not least, the fear of a nuclear catastrophe, particularly after the devastating accident at the Chernobyl nuclear plant on April 26, 1986. These developments led a growing number of citizens to support environmental organizations.

In the early 1980s, Italy's four main environmental associations – WWF, Lega per l'Ambiente, LIPU, and Italia Nostra – counted a combined membership of approximately 76,000. By the mid-1990s, WWF had reached 281,000 members, Legambiente 115,000, Greenpeace 40,000, and the Italian section of Friends of the Earth about 25,000.

To borrow a term from political scientist Giovanni Sartori, a significant proportion of these members had been «video-bambini»

(TV-raised children), a phrase originally used pejoratively in *Homo Videns*¹. Stripped of its negative connotation, the term points to an undeniable historical shift: for the first time, children and adolescents in the 1970s and 1980s were shaped by a formative influence dominated by television, most notably through the rise of Japanese anime, which introduced a distinctive narrative model².

This leads us to an intriguing question: what connection could possibly exist between the rise of mass environmentalism and the popularization of commercial animated series? As it turns out, the link is neither obscure nor far-fetched. Sartori was right in noting that the imaginations of the «video-bambini» of the 1970s and 1980s were profoundly colonized by the television content of that era. It is not unreasonable to argue that the environmental sensibilities of these generations – far more acute than those of their parents, who came of age during the economic boom and the ideology of industrial growth – were shaped less by a deep understanding of ecological science than by the allure of fantastical animated worlds populated by vibrant heroes, anthropomorphic animals, robots, and pastel-colored dreamscapes.

As we shall see, the narrative rhetoric of anime is suffused with constant references to nature and the urgent need to protect it. For

¹ Giovanni Sartori, *Homo videns*. Roma-Bari: Laterza, 1997. See also Piero Bertolini, Milena Manini, *I figli della TV: una ricerca su bambini e televisione*. Scandicci: La nuova Italia, 1988; Francesca Anania, *Davanti allo schermo: storia del pubblico televisivo*. Roma: NIS, 1997.

² Matthew Allen, Rumi Sakamoto, *Popular Culture, Globalization and Japan*. London-New York: Routledge, 2006; Anne Allison, *Millennial Monsters. Japanese Toys and the Global Imagination*. Berkeley: University of California Press, 2006; Gary Cross, Gregory Smits, *Japan, the U.S. and the Globalization of Children's Consumer Culture*, «Journal of Social History», 38, 4, pp. 873-890; Matteo Casari (ed.), *Culture del Giappone contemporaneo. Manga, anime, videogiochi, arti visive, cinema, letteratura, teatro, architettura*. Latina: Tunué, 2011; Marco Teti, *Generazione Goldrake. L'animazione giapponese e le culture giovanili degli anni Ottanta*. Milano-Udine: Mimesis, 2011.

the children and adolescents of the 1970s and 1980s – generations raised in a time of growing affluence – support for organized environmentalism appears to be rooted more in the emergence of a vaguely ecological sentiment conveyed through mass visual culture (including the anime discussed here, but also television documentaries such as *Quark* and *Big Bang* from the 1980s) than in close readings of Engels' *Dialectics of Nature* or Thoreau's *Walden*. In other words, where Engels and Thoreau failed, Goldrake and Heidi succeeded.

Anime from the golden age of television (1970s–1980s) may be categorized into three narrative universes: robot epics, fairy-tale narratives of everyday life, and children's anime with anthropomorphic animal protagonists.

The first group includes the mecha series: combat robot narratives such as *UFO Robot Grendizer*, *Mazinger Z*, *Great Mazinger*, *Jeeg Robot*, *Gundam*, and lesser-known titles like *Daltanious*, *God Sigma*, and *Daitarn 3*. These series typically follow a dualistic narrative: on one side, heroic defenders of the Earth; on the other, malevolent forces seeking to dominate the planet by exploiting its resources and enslaving its people³. While undeniably anthropocentric and shaped by the myth of technological modernization – as well as by Cold War tensions and nuclear anxieties (evidenced by the popularity of films like *The China Syndrome*, 1979; and *The Day After*, 1983) – these narratives also lend themselves to environmental interpretations. Central to all these series is a struggle over the use and control of

³ Frederik L. Schodt, *Inside The Robot Kingdom: Japan, Mechatronics, and the Coming Robotopia*. Tokyo-New York: Kodansha International, 1988; Marco Pellitteri, *Nippon ex Machina: Japanese Postwar Identity in Robot Anime and the Case of UFO RoboGrendizer*, «Mechademia», 4, 2009, pp. 275-288; Selma Šabanović, *Inventing Japan's 'Robotics Culture': The Repeated Assembly of Science, Technology, and Culture in Social Robotics*, «Social Studies of Science», 44, 3, pp. 342-367; Jacopo Nacci, *Guida ai super robot. L'animazione robotica giapponese dal 1972 al 1980*. Bologna: Odoya, 2016; Massimo Nicora, *C'era una volta...prima di Mazinga e Goldrake. Storia dei robot giapponesi dalle origini agli anni Settanta*, Tricase (Le): Youcanprint, 2017.

finite natural resources. For instance, in *Grendizer*, the people of Vega seek to conquer Earth because the Vegatron radiation has rendered their previous planets uninhabitable. In the first episode («Alcor and Actarus»), Koji Kabuto advocates peaceful exchanges with alien civilizations, warning that Earth has «almost exhausted its resources». Nature features prominently in both the settings and the dialogues of mecha anime: after battles, Actarus frequently reminds himself of the need to protect the «wonderful» planet Earth and its «wonderful» nature.

The second narrative domain includes fairy-tale depictions of everyday life⁴, such as *Heidi* and *Doraemon*. In *Heidi* (1974, first aired in Italy in 1978), the dichotomy between nature and anthropized environments is striking: on one side, the Swiss Alps where Heidi lives in harmony with her grandfather, his goats, the dog Nebbia, and the mountains; on the other, Frankfurt, a city marked by indifference and rigid social norms symbolized by the stern governess, Miss Rottenmeier. Directed by Isao Takahata and with layout supervision by Hayao Miyazaki (who would go on to create environmentally themed masterpieces such as *Nausicaä of the Valley of the Wind*, *My Neighbor Totoro*, and *Princess Mononoke*), *Heidi* portrays the mountains as a space of freedom where Heidi can fully express her love for animals and nature. Nature here assumes an almost healing role: exposure to the Alpine landscape helps Clara, Heidi's friend from Frankfurt, to recover from polio. In *Doraemon* (1973, then 1979; aired in Italy from 1982), a robot cat from the 22nd century helps Nobita – a well-meaning but clumsy and lazy child – through the use of futuristic gadgets. Environmental concerns are addressed across many episodes, which deal with urban pollution, endangered species, land use, and especially energy shortages, echoing the global effects of the 1979 oil crisis.

⁴ Marco Pellitteri, *Mazinga nostalgia. Storia, valori e linguaggi della Goldrake-generation dal 1978 al nuovo secolo*. Latina: Tunué, 2018.

The third narrative universe features anthropomorphic animal characters⁵, with *Maya the Bee* (1975, aired in Italy in 1980) as a prime example. This anime follows a microcosm of insect characters – Maya, the drone Willy, the grasshopper Flip, the spider Tekla – and invites children to appreciate the magical world of meadow creatures well before the global success of the film *Microcosmos* (1996). Its debt to the Disney tradition is evident: early Disney animations such as *Three Little Pigs* (1933) and *Bambi* (1942) also emerged in an era shaped by rising environmental awareness. These works often reflected a progressive conservationism, featuring a rigid dichotomy between good (birds, deer) and bad (wolves, coyotes) animals, the latter often hunted to near extinction.

A 2013 article argues that anthropomorphism fosters positive public attitudes toward conservation projects. According to the authors, people are more inclined to relate empathetically to animals that exhibit human-like traits. The flip side, however, is a distorted understanding of nature, in which anthropomorphized animals are expected to behave like humans, an expectation that may lead to misguided interactions, often resulting in real-life incidents involving exotic or undomesticated pets⁶.

In conclusion, these brief reflections suggest that it is both possible and perhaps necessary to examine a complex, pivotal, and contentious issue such as the environment – and its political articulation, environmentalism – within a broader cultural and social framework. Only by doing so can we hope to rescue scientific discourse from the ideological entrenchments that increasingly threaten its rigor and objectivity.

⁵ Azuma Hiroki, Yuriko Furuhashi, Marc Steinberg, Thomas Lamarre, *The Animalization of Otaku Culture*, «Mechademia», 2, 2007, pp. 175-187.

⁶ Meredith Root-Bernstein, Leo Douglas, A. Smith, Diogo Veríssimo, *Anthropomorphized Species as Tools for Conservation: Utility Beyond Prosocial, Intelligent and Suffering Species*, «Biodiversity and Conservation», 22, 2013, pp. 1577-1589.

Part IV

Insights on Italy's Environmental Challenges



12. The Loss of Environmental Innocence: Five Decades After Seveso

During the years of chaotic post-war economic development, Italy began to discover one of the darker sides of prosperity: pollution. The media – at first with a hesitant approach, then in increasingly urgent and alarmed tones – began reporting on this phenomenon, which, for the first time in history, had reached such a scale as to significantly damage ecological balances, cause serious harm to human health, and render the natural environment unfit for animal life.

Four cases dominated newspaper headlines and monopolized television news. Between 1956 and 1987, the Bormida Valley was the scene of intense conflict between local communities and the chemical company Acna, which operated a plant in Cengio producing, among other things, explosives, benzene and naphthalene derivatives, phenols, butyl phthalate, and aniline. At the heart of the dispute was the pollution of the Bormida River basin: as early as 1909, the magistrate of Mondovì had prohibited the use of well water in several valley towns, and in 1922 the Cortemilia aqueduct was closed. In 1969, the supply of drinking water in the municipality of Strevi was suspended, and in 1970, the municipal government of Acqui Terme filed a complaint against unidentified individuals for the crime of negligent poisoning. It was not until 1987, however, that it was definitively established that the Bormida River was contaminated by industrial chemicals, and its basin was declared an area at high risk of environmental crisis. In 1976, an accident at a chemical

factory in Seveso (Icmesa, owned by Givaudan/Hoffmann-La Roche, where 2,4,5-trichlorophenol and hexachlorophene were produced) released a cloud of dioxin over an 18 km² area: the consequences included numerous cases of chloracne among children, a notable increase in abortions, and serious soil contamination requiring the removal of the surface layer for remediation.

In the second half of the 1970s, the first signs of eutrophication appeared in the stretch of the Adriatic Sea between the Venice Lagoon and the Emilia-Romagna coastline. Eutrophication became evident during 1988–1989, when the waters were infested with mucilage (floating agglomerates of high molecular weight organic products).

By the mid-1980s, significant traces of atrazine were found in the surface groundwater of the Po basin (about 11,200 tons were used between 1984 and 1986). Atrazine is a widely used herbicide in agriculture that can persist in the soil for 10 to 17 months.

Among the four cases mentioned, the one in Seveso triggered a powerful emotional reaction across the country. In his remarkable book about the disaster, Bruno Ziglioli recounts the moment of the incident as follows:

«July 10, 1976 was a calm and muggy Saturday. It hadn't rained for two months. [...] Only a few of the 160 employees were present at the Icmesa plant in Meda, specifically those assigned to maintenance and packaging. The production lines and reactors had been shut down since dawn. [...] At 12:37 PM on that July 10, the few workers inside the plant heard a prolonged hissing sound and saw vapors escaping for about twenty minutes from the discharge pipes of sector B, forming a dense, reddish cloud of considerable height. [...] The cloud directly affected the houses around the factory, in a newly urbanized area mostly inhabited by immigrant families from Veneto and southern Italy. [...] In the following days, the situation proved to be much more serious than the factory's officials had suggested. Rabbits and poultry began dying. The grass turned yellow. Leaves curled and tore. Tree bark

peeled off. Most notably, children living near the plant began to experience facial swelling and eye redness»¹.

The disfigured children from chloracne; the issue of dioxin's teratogenicity (the potential of the substance to cause malformations in embryos) and the ensuing clash between those advocating for abortion rights and those staunchly opposed (note that abortion was only formally legalized in Italy after the referendum of May 17–18, 1981); and the uncertainty around environmental cleanup (the heated debate between those favoring incineration of the contaminated soil and those demanding secure land burial) all fueled an intense public debate, which led to the establishment of a Parliamentary Commission of Inquiry.

Although the commission's work did not lead to new legislation, its final report remained, for many years, the only document detailing the responsibilities of Icmesa and Givaudan (legal proceedings ended in 1986 with two convictions). More effective was the action of the European Economic Community, which, aiming to prevent major industrial risks, passed a directive (82/501/EEC, known as the «Seveso Directive»)² requiring an inventory of at-risk facilities, the development of prevention and emergency plans, the regulation of construction near potentially

¹ Bruno Ziglioli, *La mina vagante. Il disastro di Seveso e la solidarietà nazionale*. Milano: FrancoAngeli, 2010. See also Fritz Vahrenholt, *Seveso: Informationen über eine Umweltkatastrophe*. Berlin: Umweltbundesamt, 1976; Laura Conti, *Visto da Seveso. L'evento straordinario e l'ordinaria amministrazione*. Milano: Feltrinelli, 1977; Tom Margerison, Marjorie Wallace, Dalbert Hallenstein, *The Superpoison, 1976-1978*. London: Macmillan, 1981; Laura Centemeri, *Ritorno a Seveso: il danno ambientale, il suo riconoscimento, la sua riparazione*. Milano: B. Mondadori, 2006; Robert Emmet Hernan, *This Borrowed Earth: Lessons from the Fifteen Worst Environmental Disasters Around the World*. New York: Palgrave Macmillan, 2010; Paolo Rabitti, *Diossina. La verità nascosta. Un supertecnico indipendente indaga su Seveso e la sua eredità di bugie*. Milano: Feltrinelli, 2012; Federico Robbe, *Seveso 1976. Oltre la diossina*. Castel Bolognese: Itaca, 2016; Monica Seger, *Toxic Matters: Narrating Italy's Dioxin*. Charlottesville-London: University of Virginia Press, 2022.

² Council of the European Communities, *Implementing the Seveso directive: conference, October 1983*. London: Oyez Scientific & Technical Services, 1983.

dangerous factories, and the creation of an authority responsible for site inspections. Italy did not adopt the European directive until 1988, a delay worsened by the existence of other environmental crises (the Anic plant in Manfredonia; the industrial area between Priolo and Melilli in Siracusa; the Caffaro plant in Brescia, where PCBs were produced).

As for health consequences, according to a study by the Fondazione Lombardia per l'Ambiente (Lombardy Foundation for the Environment) cited by Ziglioli, between 1976 and 1991, deaths from pancreatic cancer among men in zone A (the most polluted area) doubled. Bladder cancers increased 2.5 times, and rectal cancers, Hodgkin's lymphoma, and leukemia cases tripled. Among women in zone A, fatal digestive tract cancers increased eightfold, and melanomas ninefold. In zone B, there was also a significant increase in liver, bone, brain, and thyroid cancers, as well as Hodgkin's lymphoma and myeloma.

Beyond environmental and health issues, the Seveso case highlighted the ambiguous attitude of labor unions and workers. It is too easy – and demagogic – to blame the delayed implementation of environmental policies solely on corporate interests, which often aligned with those of workers. Certainly, companies tried in every (legal and illegal) way to delay the application of (ineffective) regulations and probably concealed the dangers of certain processes from workers. However, for decades, workers themselves prioritized job security over environmental and health protection.

A telling example comes from a worker at the petrochemical hub in Siracusa (Sicily), quoted in a valuable book edited by Salvatore Adorno, Pasquale Aloscari, and Fabio Salerno:

«I had a conscience, I asked myself about all these things: why are we polluting, destroying, but no one spoke up. One must not forget that those were intelligent people – they still are – but if there was

a strike, it was always about wages, never about the environment. It was never discussed»³.

Even in the Seveso case, as Ziglioli notes, the trade union movement still followed a strictly technical approach and remained distant from the comprehensive view of environmental issues proposed by the emerging ecological movement.

³ Salvatore Adorno, Pasquale Aloscari, Fabio Salerno (eds.), *L'industria, la memoria, la storia. Il polo petrolchimico nell'area costiera tra Melilli, Augusta e Siracusa (1949-2000)*. Siracusa: Morrone Editore, 2008, pp. 230-231.

13. Leaving Nature Behind: The Human Journey

The extraordinary snowfall that affected central Italy, along with the disaster at the Rigopiano Hotel in Farindola (Pescara), has reignited the debate over the relationship between human beings and nature¹. Disoriented by the unusual circumstances, both the media and the public (via their social media profiles) directed accusations of shortsightedness and incompetence at public officials, employing the usual melodramatic tones (in the case of the former) and aggressive rhetoric (in the case of the latter).

In the aftermath of the avalanche that buried the Rigopiano Hotel, comparisons proliferated between Italian heedlessness and Japanese foresight, one of those tropes that have now gone viral, akin to the idea that the twentieth century, of course, was a *short* century. Evidently, journalists and haters of all kinds quickly forgot the tsunami that struck Japan's eastern coast in the Tōhoku region in 2011².

In the Asian country – which, in Italian public opinion, is often synonymous with efficiency and rigor – the scientific knowledge available to policymakers was not used to inform development policies grounded in the precautionary principle. In a coastal area

¹ Simona De Leonardis, *Rigopiano: vite spezzate*. Pescara: Il Centro, 2017; Adriana e Giampiero Parete, *Il peso della neve: storia della nostra famiglia sotto la valanga di Rigopiano*. Milano: Mondadori, 2018; Giampaolo Matrone, *L'ultimo sopravvissuto di Rigopiano: 62 ore sotto la neve*. Roma: Newton Compton, 2024.

² Yoshitsugu Hayashi, Yasuhiro Suzuki, Shinji Sato, Kenichi Tsukahara, *Disaster Resilient Cities: Concepts and Practical Examples*. Oxford-Boston: Elsevier Butterworth-Heinemann, 2016.

where the risk of tsunamis is particularly high, such a principle should have discouraged the urban densification that took place. Relying on the scientific credibility of seismological forecasts (which did not predict catastrophic events in the region) and the functionality of the warning system, Japan's northeastern coastline on the main island of Honshu was protected by anti-tsunami seawalls ranging in height from 18 to 38 feet (5.49 to 11.58 meters). This gave rise to a sense of security that diluted public fear regarding the devastating effects of a tsunami and fostered widespread support for coastal densification.

On March 11, 2011, however, nature defied Japan's precautionary measures with an unexpected magnitude 9.0 earthquake – one of the most powerful in recorded history – followed by a tsunami with wave heights ranging from 10 to 40 meters. The disaster resulted in over 15,000 confirmed deaths and caused severe damage to the Fukushima Daiichi nuclear power plant, an event classified at the highest level of severity, comparable to the Chernobyl disaster in Ukraine³.

Returning to Farindola, the Rigopiano Hotel had been built on an elevated area formed by debris that had previously flowed down from the gully above the site. Notably, in 1936, an avalanche of similar magnitude (approximately 120,000 tons) had occurred in the same location, comparable to that of January 18, 2017.

These two episodes – natural events occurring within highly anthropized contexts – can be interpreted as unexpected and tragically consequential manifestations of a now-dominant cultural legacy: one that views humanity, empowered by scientific

³ Jeff Kingston (ed.), *Natural Disaster and Nuclear Crisis in Japan : Response and Recovery after Japan's 3/11*. London-New York: Routledge, 2012; Roy Starrs (ed.), *When the Tsunami Came To Shore: Culture and Disaster in Japan*. Leiden-Boston: Global Oriental, 2014; Shigenori Matsui, *Law And Disaster: Earthquake, Tsunami And Nuclear Meltdown In Japan*. Abingdon, Oxon; New York: Routledge, 2019; Koichi Haga, *The Earth Writes: the Great Earthquake and the Novel in Post-3/11 Japan*. Lanham: Lexington Books, 2019; Carl Lindahl, Michael Dylan Foster, Kate Parker Horigan (eds.), *We Are All Survivors: Verbal, Ritual, and Material Ways of Narrating Disaster and Recovery*. Bloomington, Indiana: Indiana University Press, 2022.

knowledge and technological achievements, as capable of subordinating nature through the complete control of its elements. The construction of a nuclear power plant on an oceanic coast threatened by tsunamis; the building of a hotel at the base of a gully prone to avalanches; and the hysterical reactions of citizens and the media to the disruptions caused by an uncontrollable event – such as an exceptional snowfall – are all expressions of a cultural mindset that has forgotten, as Leopardi reminds us in his *Dialogo di un folletto e di uno gnomo* (Dialogue between a Goblin and a Gnome), that nature is not benevolent toward humans. It is utterly indifferent to our fate: the extinction of humanity would not stop the rivers from flowing, nor would it alter the rising and setting of the stars.

If one were to identify a common denominator across different historical epochs, it might well be the continuous evolutionary drive to distance humanity from the state of nature. The Judaeo-Christian tradition, Aristotle's *Phaedo*, Dante's *Ulysses*, and even the more banal «stay hungry, stay foolish» mantra popularized by Steve Jobs are all historically embedded representations of a singular desire: that of *Homo sapiens* to become something other than what biology has made him a species belonging to the primate family.

In the modern and contemporary era, this process can be divided into two broad macro-periods.

The first began with the rise of seventeenth-century scientific thought and ended around the mid-1970s, when the accelerated phase of industrial development came to a close. This period was characterized by three pivotal moments in the process of distancing from nature: first, the rise of mechanistic philosophy (1600–1700), which employed the machine model to explain natural phenomena (for Robert Boyle, the universe was a self-moving machine; for Johannes Kepler, a vast clockwork); second, the dissemination (in the 1800s) of the economic system theorized by classical economists (Adam Smith, David Ricardo, John Stuart Mill), which viewed the exploitation of natural resources as a measure of humankind's capacity to dominate

nature in pursuit of material well-being; and third, the mass acceptance of modernization (1900–1974), characterized by industrialization based on machine technology, the functional specialization of various spheres of social life, and the recognition of science and technology as primary sources of economic growth and social change.

The second macro-period began to emerge in the late 1970s and has not yet concluded. Its initial phase, spanning from 1974 to the early 1990s, witnessed the rise of ecological crises caused by industrialization, which undermined the modernization paradigm and gave birth to the environmentalist movement. From the late 1990s onward, a pronounced dualism has emerged between the modernization paradigm – adapted by the sorcerer’s apprentices of post-thought to a hyper-technologized society dominated by artificial intelligence tasked with advancing humanity’s progress and maintaining its alienation from the state of nature – and radical environmentalist movements, which began to promote, in Slavoj Žižek’s words, the image of a benevolent Mother Nature violated by human arrogance⁴.

In the twenty-first century, movements such as primitivism (which advocates a return to a pre-agricultural social model), deep ecology (which aims to overthrow the current civilization perceived as anti-nature), and vegetarianism (particularly its more radical variants such as veganism and fruitarianism) have increasingly entered public discourse. These ideas have evolved into a genuine alternative mainstream to the value system established between the seventeenth century and the 1970s. The appropriation of radical environmentalist theories – often simplified and reduced to fashionable, cool trends by global elites and mass media – has propagated the now widespread view of nature as always and inevitably a friend and ally of humanity. This has led to the rejection of scientifically based (and therefore supposedly *unnatural*) treatments for serious diseases; to homes

⁴ Slavoj Žižek: *Lessons From the “Airpocalypse”*. On China’s smog problem and the ecological crisis, <https://inthesetimes.com/article/spaceship-earth-lessons-of-airpocalypse-slavoj-zizek-climate-ecology-smog> (Last accessed, May 2025).

increasingly filled with exotic pets (some potentially deadly, such as the African rock python); and to tourists in shorts wandering across glacial crevasses.

In short, the dynamics described above have given rise to two opposing cultural distortions, both rooted in the same anthropocentric mindset. On one side are the champions of scientific and technological progress, seen as essential for shielding humanity from nature's hostile forces; on the other, those who long for a return to an idyllic state of nature, a state that, in reality, never existed. The consequence is a diminished ability to recognize potential threats, whether human-made (such as pollution or resource depletion) or natural (like tsunamis, avalanches, viruses, or dangerous animals).

14. Nature and Conflict: The Dichotomy Between Ecocentrism and Local Traditions in Italian Parks

In 2017, numerous journalistic reports highlighted both favorable and opposing views regarding the increasing presence of wild animals (ungulates and, to a lesser extent, canids) in Italian forests. To understand the nature of this debate, it is necessary to briefly review the history of the environmental protection movement.

In the second half of the 19th century, two philosophical and cultural views of the relationship between humans and the natural environment developed, predominantly in the United States. These can be summarized under the terms *preservationism* and *conservationism*. The first – whose main proponents were Ralph W. Emerson, Henry D. Thoreau, and John Muir – believed it was essential to preserve the remaining pristine portions of nature to counter the devastation caused by industrial development and urbanization. The second – whose foremost representative was Gifford Pinchot, an expert in forest management – subordinated the goal of protection to an economic management of natural resources, aiming to rationalize human intervention in ecosystems to maintain ecological balances¹. In the early decades

¹ Peter H. Marshall, *Nature's Web: An Exploration of Ecological Thinking*. London: Simon & Schuster, 1992; James McKusick, *Green Writing: Romanticism and Ecology*. New York: St. Martin's Press, 2000; Roderick F. Nash, *Wilderness and The American Mind*. New Haven: Yale University Press, 2001; J. Edward de Steiguer, *The Origins of Modern Environmental Thought*. Tucson: University of Arizona Press, 2006; Lloyd Willis, *Environmental Evasion: the Literary, Critical,*

of the 20th century, within the emerging environmental protection movement in the United States, a component began to emerge that is generally referred to as progressive conservationism². Its ideological foundations can be traced to a rigidly dichotomous view of the animal world – where certain animals were considered good (such as birds and deer) and others harmful (particularly carnivorous predators like wolves and coyotes) – and to an economic conception of nature as a set of resources to be managed profitably.

Progressive ideology began to exert its influence on environmental protection policies during the presidency (1901-1908) of Theodore Roosevelt, an avid hunter. In 1887, he had founded the Boone and Crockett Club with the aim of promoting the establishment of nature reserves and an ethical hunting model. Under his administration, numerous protected areas were created (16 national monuments and 53 reserves), public forest lands were expanded, and a National Environmental Protection Congress (1908) was convened, which was attended by the governors of 44 states. Additionally, the National Forest Service and the Bureau of Biological Survey were organized to control wildlife. Starting in 1905, the direction of environmental protection policies was entrusted to these two departments, which were tasked with managing natural resources to support a long-term development strategy. The Forest Service, led by Gifford Pinchot, implemented a forest management system based on the idea of treating trees in such a way that one crop would follow another. According to Pinchot, forestry aimed to «produce the greatest possible amount of yield or product from the forest and extend the production for future generations of both humans and trees». The Bureau thus became the federal agency responsible for

and Cultural Politics of Nature's Nation. Albany NY: State University of New York Press, 2011.

² Donald Worster, *Nature's Economy: A History of Ecological Ideas*. Cambridge: Cambridge University Press, 1994; James G. Lewis, *The Forest Service and the Greatest Good: A Centennial History*. Durham NC.: Forest History Society, 2005; Michael Robinson, *Predatory Bureaucracy: The Extermination of Wolves and the Transformation of the West*. Boulder: University Press of Colorado, 2005.

conducting the predator extermination campaign that characterized conservationist actions in the first three decades of the 20th century. In 1933, Aldo Leopold – a Forest Service official and professor of wildlife management – published a book (*Game Management*) in which he supported the systematic elimination of predators, advocating the utilitarian and productivist approach of Pinchot. Leopold believed that conservation activities required, in order to be effective, intentional and targeted manipulation of the environment, the same kind of manipulation used in forestry.

In the same years that *Game Management* was published, the wildlife policies supported by the Bureau of the Biological Survey were harshly criticized both by the successors of the original preservationism (such as the Sierra Club) and by scientific organizations such as the American Society of Mammalogists. These critics accused the Bureau of pursuing wildlife control based purely on economic criteria, without considering the potential environmental consequences of practices such as using poisonous substances to eliminate predators and, more generally, animals deemed harmful. This led to the development of a new ecological sensitivity that, in 1936, resulted in a concrete achievement: the cessation of predator hunting in national parks.

Thus, the 1930s marked a turning point in the history of the environmental protection movement because the growing belief that the safeguarding of nature constituted an ethical imperative, rather than a mere tool for the centralized and productivist management of natural resources, began to undermine the credibility of the utilitarian conservationism associated with Pinchot's ideas³.

Starting in the 1950s, conservation organizations (in Italy: Federnatura, Wwf, Lipu) launched a series of protection campaigns that used the anthropomorphization of animals – a process facilitated by mass culture, with cartoons like Mickey Mouse (1928), Donald Duck (1934), Tom and Jerry (1940), Bambi

³ Susan Flader, *Thinking Like a Mountain: Aldo Leopold and The Evolution of an Ecological Attitude Toward Deer, Wolves, And Forests*. Madison Wis: University of Wisconsin Press, 1994

(1942), Yogi Bear (1958), the Looney Tunes (1930-1969), and 101 Dalmatians (1961) – to capture the attention of an increasingly broad public. Over the decades, the actions of conservation organizations and the spread of animal rights ideas (in 1975, Australian philosopher Peter Singer published *Animal Liberation*) contributed to the rise of a new dichotomous representation that opposed humans (the evil species) to animals (the virtuous species, subjected to anthropocentrism). In this context, in the 1990s, the environmental movement succeeded in securing the creation of 15 new national parks (followed by 5 more between 2001 and 2016), which added to the 6 established between 1922 and 1989⁴.

The new protected areas have been established in territories that were erroneously considered natural, when, in fact, they are the result of centuries of human action: until the early decades of the 20th century, the areas now enclosed by parks were an important common resource (those common goods that, recently, a portion of the historical-environmental literature has been analyzing) for the populations that relied on the natural heritage for their sustenance (gathering forest products, grazing, firewood, charcoal production). The significant limitation of human activities in the A and B areas of the parks has led to two pernicious effects: it has strained the centuries-old relationship between the resident populations and the land (effectively expelling traditional activities that had, for centuries, been entrusted with the care of the commons); it has imposed an idea of integral conservation that may be sensible for the Amazon rainforest or for large African parks (even in these cases, however, literature has begun to highlight the environmental damage caused by conservationism), but certainly not for mountains, hills,

⁴ Luigi Piccioni, *Cento anni di parchi: scritti di storia delle aree protette italiane*. Camerino: Università di Camerino, 2022; Giacomo Zanolin, *Geografia dei parchi nazionali italiani*. Roma: Carocci, 2022; Luigi Piccioni, *Parchi naturali: storia delle aree protette in Italia*. Bologna: il Mulino, 2023.

and forests whose ecological balance has never excluded the active (and regulatory) presence of humans⁵.

The result of conservation policies has been the explosion of populations of ungulates (wild boars, roe deer, fallow deer, red deer) that has exacerbated the conflicts between environmentalists (the noisy minority that imposed protected areas) and local citizens within the park boundaries, who are frustrated by the damage caused by animals and by ecocentric-inspired legislative measures (such as laws requiring the rescue of wild animals injured in traffic accidents). We are witnessing, thus, the polarization of a conflict in which the narrative of the more radical fringes of environmentalism (animals portrayed as defenseless Bambi-like creatures, at the mercy of the cruelty of the anthropocentric ogre) and the pervasiveness of the animal rights discourse (amplified and presented emotionally by advertising and media) is imposing an ecocentric view in the public discourse that mystifies the social and cultural dynamics which, over the centuries, have shaped the beauty of the territories now protected.

⁵ Wendy Hart Beckman, *National Parks in Crisis: Debating the Issues*. Berkeley Heights, NJ: Enslow Publishers, 2004; Paolo Francalacci, Giuseppe Mureddu, *I parchi nazionali: agonia di un'idea?* Firenze: Alinea, 2007; Accademia dei Georgofili, *La gestione della fauna selvatica ungulata tra insostenibilità dei danni in agricoltura, tutele e opportunità*. Firenze, 19 ottobre 2017. Firenze: Polistampa, 2018; Renzo Moschini (ed.), *Ambiente e territorio: i parchi tra crisi e rilancio*. Pisa: ETS, 2019.

15. Real Estate Profits, Illegal Building, and Coastal Urbanization

Since the 1920s, the construction sector has been one of the main drivers of the Italian economy. In the aftermath of the Second World War, urban development was heavily influenced by private interests, which ultimately delayed and shaped urban planning. The disorderly and chaotic expansion of urban areas was a direct consequence of the mechanisms governing the real estate market: land rents, in fact, generated income only if the area in question was built upon, and since prices were proportional to the amount of construction carried out, developers and real estate intermediaries were incentivized to maximize density. This mechanism, aimed solely at maximizing rents, led to the approval of vastly overestimated urban development plans.

In this context, urban planning legislation remained anchored to the 1942 law, as during the 1950s and 1960s Parliament failed to pass a new general law, and the proposals that were put forward never advanced beyond committee readings. The most well-known of these proposals was undoubtedly the one bearing the name of Christian Democrat Fiorentino Sullo, Minister of Public Works from February 1962 to May 1963 in the fourth Fanfani government. The draft law explicitly called for the coordination of urban planning with economic programming and envisaged three levels of planning: municipal plans, district (comprensorial) plans, and regional plans. However, the project stalled in the face of a fierce offensive by the construction lobby, which distorted the contents of the law to the point of raising the specter of the

collectivization of property. This campaign of denigration against what was branded as Sullo's «urban planning scandal» effectively brought about the end of his political career.

In 1967, the Commission of Inquiry for the Protection and Enhancement of the Historical, Archaeological, Artistic and Landscape Heritage explicitly referred to a tumultuous process of anarchic settlement and an intense, concentrated or scattered urbanization that had overtaken the entire national territory without restraint or regulation, overwhelming the weak indications of landscape plans or the provisions of the few existing plans, or falling victim to archaic regulations, and giving rise, in every respect, to a form of uncivil urban product, extremely costly to the community.

In 1985, the Craxi government passed Law No. 47/85, which allowed for the legalization of building violations committed up to October 1, 1983. Approximately four million applications were submitted, many of which concerned constructions in vacation areas, particularly along the coasts of Lazio, Campania, Puglia, Calabria, and Sicily. A second amnesty law was passed in 1994 by the first Berlusconi government, followed by a third in 2003 under Berlusconi's second administration¹. The absence of effective urban planning policies has led to significant land consumption,

¹ For studies on Italian urban planning, see Cesare De Seta, *Città, territorio e Mezzogiorno in Italia*. Torino: Einaudi, 1977; Marcello Fabbri, *L'urbanistica italiana dal dopo-guerra ad oggi: storia, ideologie, immagini*. Bari: De Donato, 1983; Marco Romano, *L'urbanistica in Italia nel periodo dello sviluppo (1942-1980)*. Venezia: Marsilio, 1991; Giuseppe Dematteis, *Le trasformazioni territoriali e ambientali*, in *Storia dell'Italia repubblicana*, Vol. II, *La trasformazione dell'Italia. Sviluppo e squilibri*, Tomo I. Torino: Einaudi, 1995; Giuseppe Campos Venuti, Federico Oliva (eds.), *Cinquant'anni di urbanistica in Italia 1942-1992*. Roma-Bari: Laterza, 1999; Giuseppe Campos Venuti, *Città senza cultura. Intervista sull'urbanistica* (edited by Federico Oliva). Roma-Bari: Laterza, 2010; Paolo Berdini, *Breve storia dell'abuso edilizio in Italia. Dal ventennio fascista al prossimo futuro*. Roma: Donzelli, 2010; Francesco Curci, Enrico Formato, Federico Zanfi (eds.), *Territori dell'abusivismo: un progetto per uscire dall'Italia dei condoni*. Roma: Donzelli, 2017; Edoardo Zanchini, Michele Manigrasso, *Vista mare. La trasformazione dei paesaggi costieri italiani*. Milano: Edizioni Ambiente, 2017.

which the *Istituto superiore per la protezione e la ricerca ambientale* (Italian Institute for Environmental Protection and Research, ISPRA) estimates at 21,100 km², equivalent to 7% of the national territory. Taking into account the area directly or indirectly affected within a 200-meter radius of transformed zones, ISPRA estimates that 75.5% of the country's surface is impacted by environmental disturbance caused by artificial land cover (this figure decreases to 42.2% when the buffer is reduced to 60 meters). The regions experiencing the highest levels of environmental disturbance due to land consumption are Apulia (87.6%), Emilia-Romagna (87.5%), Marche (83.1%), Sicily (82.7%), Campania (82.4%), and Tuscany (80.4%)².

The phenomenon is particularly severe in coastal zones, where the percentage of land consumed within 300 meters from the shoreline reaches 22.9%, more than three times the national average. The most heavily urbanized coastlines are those of Liguria (47.8%), Marche (45.6%), Abruzzo (36.3%), Campania (35%), Emilia-Romagna (33.7%), and Lazio (30.8%).

The two main anthropogenic pressures are industrial activities and tourism. Coastal areas are characterized by the presence of large industrial hubs, including chemical, petrochemical, and steel industries, as well as power generation plants. In areas where heavy industry has vacated the coastline, intense tourism has developed, which over time has caused massive changes to the coastal morphology, often resulting in human pressure exceeding the land's capacity. This, in turn, has exacerbated several serious environmental issues. Tourism, concentrated in the summer months, is primarily beach-related and leads to congestion along the coast, characterized by an irrational use of the land and its associated resources.

Until the first half of the 20th century, beach tourism (which was primarily elitist) was concentrated in the Ligurian Riviera, the Sorrentine-Amalfi coast, and in locations such as Lido di Venezia

² The data presented here are taken from Ispra, *Consumo di suolo, dinamiche territoriali e servizi ecosistemici* [Land consumption, territorial dynamics, and ecosystem services]. Roma: Ispra, 2016.

and Taormina. Starting in the 1950s, the increasing demand for tourism from the Italian middle classes spurred the development of a second group of seaside resorts along the northern-central Adriatic and Tyrrhenian coasts. These areas hosted clientele that typically sought less expensive accommodations, though there was some variation within this group. Italy became the leading country in Europe for seaside tourism, attracting – not only Italian holidaymakers – but 60% of European tourists who chose to stay in coastal destinations. Italy succeeded in creating, before any other Mediterranean country, a basic level of tourism infrastructure, allowing it to present itself on the market with a highly diversified offering that could meet the needs of many income brackets discovering tourism. The number of hotels, guesthouses, and room rentals continued to grow decade after decade, perfectly in tune with the increasing number of tourists. Thus, in the field of seaside tourism, Italy was a pioneer (along with France), leading all other Mediterranean countries and maintaining an undisputed leadership until the first half of the 1980s.

The flip side of this success was the growth of urbanized areas along the coasts, marked by an unregulated construction process that has ultimately transformed the coastal environment irreversibly.

The excessive human burden on the coastlines during the summer months not only impacts the natural heritage, but also disrupts the organization of services, which are unable to meet the needs of the large number of tourists. In addition, there are the demands for water, waste production (which in coastal municipalities becomes double compared to winter months), increased vehicular traffic, and the subsequent rise in air pollution and noise.

Legambiente estimates that 3,291 kilometers of coastline are cemented, accounting for 51% of the total. Six regions exceed 60%: Calabria (65%), Liguria (64%), Abruzzo (63%), Lazio (63%), Marche (61.5%), and Sicily (61%). Since the approval of the Galasso Law in 1985, which aimed to protect landscape and

environmental assets, 302 kilometers of coastline have been covered in concrete, with an average of 13 kilometers per year. Between 1988 and 2012, 65 kilometers of coastline were cemented in Sicily, 41 in Lazio, and 29 in Campania. These construction activities often took place under conditions of unchallenged illegal building, as evidenced by the construction of what are colloquially referred to as *ecomonsters*: consider the former Fara colony in Chiavari (Genoa), the Palmaria skeleton (La Spezia), the Alimuri Hotel (Salerno, considered Italy's longest-standing illegal building), the Fuenti Hotel in Vietri sul Mare (Salerno), the Coppola Village in Castelvoturno (Caserta), the villages of Torre Mileto in Lesina and Baia Campi in Vieste (Foggia), Punta Perotti in Bari, and the Pizzo Sella hill in the Gulf of Mondello (Palermo). Illegal building is closely linked to the activities of the *ecomafias*: according to the Ecomafia reports by Legambiente, 85% of mafia clans are involved in the cement industry. In 2015, 18,000 illegal buildings were constructed, with 18% in Campania, 12% in Calabria, 10% in Lazio, and another 10% in Sicily. Furthermore, 55 years after the failure of the general urban planning law proposal (the one put forward by Fiorentino Sullo), only three regions (Tuscany, Sardinia, Puglia) have adopted tools aimed at protecting coastal territories. The eradication of illegal construction, despite periodic rhetorical announcements, seems a distant dream.

16. The Environmental Agenda of the Movimento Cinque Stelle: Rhetoric and Contradictions

Since last March 5, the media have been presenting the electoral outcome of the *Movimento Cinque Stelle*¹ (Five Star Movement) as a Copernican revolution. However, upon reviewing their environmental policy platform – one of the cornerstones of Beppe Grillo's rhetoric since his theatrical performances in the 1990s – their ideas do not go beyond a mixture of proposals and concepts borrowed from the galaxy of grassroots civic committees and radical environmentalism.

The Five Star environmentalism rests on an ideological construct, whose pillars include the defense of common goods (derived from participatory grassroots experiences opposing locally unwanted land uses), the circular economy, and degrowth. The Movement seems to embrace the approach that considers common goods – such as the atmosphere, water resources, forests, biodiversity, physical and digital infrastructure, and local commons like watersheds and urban ecosystems – as non-monetizable. In this perspective, the dominant economic

¹ On the Movimento Cinque Stelle, see Edoardo Greblo, *La filosofia di Beppe Grillo: il movimento 5 stelle*. Milano-Udine: Mimesis, 2011; Matteo Pucciarelli, *L'armata di Grillo: radiografia del Movimento Cinque Stelle*. Roma: Alegre, 2012; Giuliano Santoro, *Un Grillo qualunque: il Movimento a 5 stelle e il populismo digitale nella crisi dei partiti italiani*. Roma: Castelvecchi, 2012; Piergiorgio Corbetta (ed.), *M5S. Come cambia il partito di Grillo*. Bologna: il Mulino, 2017; Jacopo Iacoboni, *L'esperimento. Inchiesta sul Movimento 5 stelle*. Bari-Roma: Laterza, 2018.

paradigm is countered by an ecological and communitarian worldview: resistance to locally unwanted land uses thus becomes one of the tools for concretely opposing the prevailing model.

However, if the goal is to protect exhaustible natural common goods, practice appears not to follow theory: the majority of protests actually target infrastructures that the scientific community deems essential precisely to safeguard, for example, local commons from the effects of climate change. In particular, the advocates of common goods often direct their criticisms against the production of electricity from renewable sources, whose development is considered vital for reducing emissions from the so-called carbon economy. Not even public transportation systems are spared, despite being indispensable for promoting an alternative to private car use and, consequently, for protecting common goods tied to territorially localized civic uses (e.g., air quality in urban ecosystems).

Here too, there is a clear contradiction between theoretical premises and actual practice. Furthermore, the Five Star proposals regarding transportation – all centered around the glorification of cycling mobility and the demonization of long-distance transport, as though highways and high-speed trains were «pieni di signori» (full of rich people, to quote Guccini's *La Locomotiva*) rather than being used by unwilling commuters – are rather timid when it comes to the most impactful activity: freight transportation by road:

«To make the sector more efficient and sustainable [...] we aim to support the transformation of vehicle fleets through the adoption of more sustainable technologies, also by introducing incentive mechanisms for energy efficiency and the use of energy from renewable sources; to promote the digitalization of the logistics chain in the freight transport sector as well, through systems for simplification, technological enhancement, and smart logistics, such as the e-CMR or electronic delivery note, and the creation of local logistic platforms and hubs where systems for ultra-short-range, zero-impact distribution can be activated [...]».

Wordy formulations that reveal the Movement's electoral attentiveness toward a specific group – namely, the *padroncini* (small owner-operators in the transport sector) – a category decimated by the economic crisis and competition from Eastern Europe. The concept of the circular economy – an increasingly popular theme within political ecology – is understood as a practice whereby economic growth is decoupled from the extraction and consumption of resources. The goal of the circular economy is to reform the linear growth model, whose main limitation lies in its inability to extend the lifecycle of a product and to preserve the intrinsic value of its components, thereby reducing the waste of materials, energy, and labor. In a recent report by Legambiente, the circular economy is described as «an extraordinary opportunity to bring about the much-needed revolution in the optimization of natural resource use and waste management, scrapping landfilling and the incineration of waste for energy purposes». Recovery and reuse thus become integral parts of production processes, along with measures aimed at reducing production costs, dependence on virgin raw materials, and pollution from waste.

Regarding the actual feasibility of transforming the economy in a circular direction, however, even Legambiente – while describing the outlook as concrete and competitive – highlights the insurmountable barriers posed by a contradictory and inadequate legal framework².

As for degrowth, the Movement seems to overlook what Serge Latouche himself has clarified, namely that the term «did not originate as a concept, and in any case not as a term symmetrical to growth: it is instead a slogan of political provocation, aimed primarily at restoring our sense of limits. [...] Clearly, degrowthers want to foster the growth of quality of life, of air, of water, and of a

² Legambiente, *Circular economy made in Italy. Atlas of circular economy champions*, European Parliament, Bruxelles, 24 April 2017. See <https://www.cartesar.it/2017/04/24/cartesar-among-the-italian-champions-of-the-circular-economy-in-brussels/> (Last accessed, May 2025); <https://www.conai.org/en/news/circulareconomy-made-in-italy-at-the-brussels-parliament/> (Last accessed, May 2025).

multitude of things that growth for growth's sake has destroyed. [...] In other words, it is not, from the outset, an economic project – not even of an alternative economy – but a social project that implies an exit from the economy as a state of affairs and as an imperialist discourse. [...] The society of degrowth, however, is neither a (utopian) return to the past nor an alignment with capitalism, but rather a (hopefully orderly) surpassing of modernity. Degrowth is necessarily anti-capitalist»³.

If degrowth is indeed what Latouche defines it to be, how is it possible to reconcile its principles – without appearing at least ambiguous – with the formal, stage-managed events of the Casaleggio Foundation, where Five Star leaders welcome lobbyists and business executives?⁴

These three pillars make Five Star environmentalism a chimera: part rigid ideology, part utopian narrative of a hypothetical world. A case in point are their energy proposals, which aim to «significantly increase the penetration of electricity to meet final energy consumption». This is a policy shared by all supranational institutions, starting with the United Nations.

However, the shift from a fossil-fuel-based economy to a decarbonized one will not result in a perfect world: more simply, we will be confronted with problems of a different nature. Digital devices and batteries intended to power electric vehicles can only be manufactured if there is adequate availability of so-called rare earth elements (scandium, yttrium, lanthanides) and other scarce materials (cobalt, germanium, tantalum...).

Their extraction will give rise to new forms of pollution and to conflicts over the control of these strategic resources. In different forms, the same dynamics previously observed with coal and then

³ Serge Latouche, *Decrescita*, in Giuliano Battiston, Giulio Marcon (eds.), *La sinistra che verrà. Le parole chiave per cambiare*. Roma: Minimum Fax, 2018, pp. 34-43.

⁴ *A Ivrea come alla buvette. Quelli che corrono alla corte di Casaleggio*, «Corriere della Sera», 8 April 2018.

with oil will be reproduced⁵. The transition to an increasingly electric and digital economy will not fulfill the vision of degrowth, nor the utopia of a planet environmentally healed through decarbonization: on the contrary, an increasing number of analysts foresee that this transition could produce a world marked by a multiplication of conflicts due, as political scientist Ian Bremmer has written, to «the complete reversal of the most important global narrative of the past fifty years: the convergence of wealth between rich and poor countries»⁶.

Environmental policies and challenges are destined to change radically, and, with them, the structure of our societies. Yet, despite new political narratives, these changes will be neither equitable nor universal.

⁵ Colette Braeckman, *Le cobalt, enjeu de la future guerre du Congo*, 28 February 2018 (<https://www.lesoir.be/142629/article/2018-02-27/congo-le-cobalt-enjeu-no-1-du-gouvernement-kabila>; Last accessed, May 2025).

⁶ *Globalizzazione fallita? La minaccia è politica*, «Corriere della Sera», 14 Aprile 2018.

Afterword:

Manifesto for a Fair and Equitable Open Access

This book has been published in open access, by choice and by conviction. I believe that knowledge should circulate freely, without economic barriers, because only a truly accessible culture can contribute to a more just, informed, and democratic society. However, this belief must be accompanied by a critical reflection on the material and structural conditions in which open access currently operates.

While it is right and desirable to make research outputs freely available to all, it is not acceptable that the financial burden of *free access* is shifted onto authors. The dominant model, in which publishing in open access requires the payment of high fees (often amounting to thousands of euros), effectively transfers the cost of knowledge dissemination from readers to those who produce it. This approach risks excluding precisely those who are most in need of visibility: early-career researchers, independent scholars, and academics working in institutions that lack the financial resources to cover such expenses.

Moreover, the international open access system is heavily reliant on the use of English, a language spoken as a mother tongue by only a minority of scholars worldwide. This creates a significant imbalance: native English speakers enjoy an inherent advantage, both in terms of linguistic expression and in navigating the implicit norms of Anglo-American academic writing. Proficiency in English thus becomes an additional, often unacknowledged, criterion of selection; one that systematically disadvantages scholars from

other linguistic and cultural backgrounds. These dynamics intersect with a broader geography of inequality in research. The major scientific publishers dominating the open access landscape are largely Anglo-American and enforce standards that reflect the values, priorities, and interests of the most powerful and best-funded institutions, typically located in wealthier countries. As a result, researchers working in more peripheral contexts – even within the so-called Global North – must compete on unequal terms: with fewer resources, less institutional support, and greater linguistic barriers. Rather than closing the gap, open access risks reinforcing or even exacerbating existing disparities, albeit in subtler ways.

Finally, I must critically examine the rhetoric of *merit* and *excellence*, increasingly deployed as supposedly neutral and universal standards of evaluation. In reality, these concepts – when not properly contextualized – function as forms of soft power that consolidate the influence of already dominant academic institutions. The criteria of excellence are often defined by those who hold institutional power, and they tend to reward compliance with dominant norms, at the expense of methodological, linguistic, and cultural diversity.

For these reasons, if open access is to serve as a genuine tool for the democratization of knowledge, we must strive for a model that is more equitable, supportive, and pluralistic. A model in which the freedom to publish is not contingent on financial means, in which language does not act as a barrier, and in which the value of research is not determined solely by quantitative metrics or market logic.

This book is a *political act*, a deliberate step toward reclaiming the right to produce and share knowledge outside the logics of profit, linguistic dominance, and structural inequality.

Appendix.

Writing History, 1998-2025: A Bibliographic Overview

This appendix offers a chronological overview of my published works over more than a quarter of a century, from my first publication in 1998 to the most recent contributions in 2025. It includes monographs, edited volumes, journal articles, essays, and other scholarly writings that reflect the evolution of my research interests and methodological approaches.

Writings in Environmental History

Books

- 1) *Gli scienziati, gli esperti e l'ambiente. Il caso italiano 1950-1990* (con Francesco Sanna). Milano: FrancoAngeli, 2025.
- 2) *Environment and Urbanization in Modern Italy*. Pittsburgh: University of Pittsburgh Press, 2020.
- 3) *Firenze 1946-2005. Una storia urbana e ambientale*. Milano: FrancoAngeli, 2014.
- 4) *Breve storia dell'ambiente nel Novecento*. Roma: Carocci, 2009.

Edited books

- 5) *Le fonti per la storia dell'ambiente. Alcune proposte di lavoro*. Soci (Arezzo): HistoryLab Dilbec-Fruska, 2013.

Book chapters and Encyclopedia entries

- 6) *Scientists and the Environment. Notes for a Study in Historical Perspective*, in Jingyuan Wu (ed.), *Scientists and the Establishment of a Mass Environmental Awareness (1950-1990)*. Roma: tab edizioni, 2025, pp. 13-52.
- 7) *Pop Culture and Circulation of Ideas. Counterculture, Environmentalism, Anti-Science, Healthism in the Musical Narratives of The Kinks and Alberto Camerini (1968-1978)*, in Jingyuan Wu (ed.), *Scientists and the Establishment of a Mass Environmental Awareness (1950-1990)*. Roma: tab edizioni, 2025, pp. 135-163.
- 8) *Anime, cultura pop e ambientalismo di massa: alcune riflessioni sulla circolazione delle idee ecologiche (1960-1990)*, in Federico Paolini (ed.), *La pop(ular) culture e la creazione di uno spazio pubblico globale*. Roma: tab edizioni, 2021, pp. 95-123.
- 9) *Ambiente e consumi sostenibili*, in *Storia d'Italia, Annali 27, I consumi*, Torino: Einaudi, 2018, pp. 385-408.
- 10) *L'Arno straripa a Firenze. L'alluvione del 4 novembre 1966 e il rischio idraulico nell'area metropolitana fiorentina*, in Gianni Silei (ed.), *Tutela, sicurezza e governo del territorio in Italia negli anni del Centro-sinistra*. Milano: FrancoAngeli, 2016, pp. 181-196.
- 11) *Introduzione. Storia dell'ambiente: "nuova frontiera storiografica" o storiografia marginale?*, in Federico Paolini (ed.), *Le fonti per la storia dell'ambiente. Alcune proposte di lavoro*. Soci (Arezzo): HistoryLab Dilbec Fruska, 2013, pp. 13-25.
- 12) *Le fonti quantitative: dai documenti empirici agli indicatori per la sostenibilità*, in Federico Paolini (ed.), *Le fonti per la*

- storia dell'ambiente. Alcune proposte di lavoro. Soci* (Arezzo): HistoryLab Dilbec-Fruska, 2013, pp. 109-126.
- 13) «Grains», in Juliana Mansvelt (ed.), *Green Consumerism. An A-to-Z Guide*. Thousand Oaks Ca.: Sage, 2011 (The SAGE Reference Series on Green Society: Toward a Sustainable Future-Series Editor: Paul Robbins), pp. 188-190.
- 14) «Meat», in Juliana Mansvelt (ed.), *Green Consumerism. An A-to-Z Guide*. Thousand Oaks Ca.: Sage, 2011 (The SAGE Reference Series on Green Society: Toward a Sustainable Future-Series Editor: Paul Robbins), pp. 304-306.
- 15) «Steady State Economy», in Nevin Cohen, Dirk P. Philipsen (eds), *Green Business. An A-to-Z Guide*. Thousand Oaks Ca.: Sage, 2011 (The SAGE Reference Series on Green Society: Toward a Sustainable Future-Series Editor: Paul Robbins), pp. 470-471.
- 16) «Renewable Energy», in Nevin Cohen (ed.), *Green Cities. An A-to-Z Guide*. Thousand Oaks Ca.: Sage, 2011 (The SAGE Reference Series on Green Society: Toward a Sustainable Future-Series Editor: Paul Robbins), pp. 370-375.
- 17) «Intermodal Transportation», in Nevin Cohen (ed.), *Green Cities. An A-to-Z Guide*. Thousand Oaks Ca.: Sage, 2011 (The SAGE Reference Series on Green Society: Toward a Sustainable Future-Series Editor: Paul Robbins), pp. 277-280.
- 18) *Industria diffusa e inquinamento nell'area fiorentino-pratese (1946-2001)*, in Salvatore Adorno, Simone Neri Seneri (eds.), *Industria, ambiente e territorio. Per una storia ambientale delle aree industriali in Italia*. Bologna: il Mulino, 2009, pp. 167-187.
- 19) *I territori dello sviluppo. L'area fiorentino-pratese (1946-95)*, in Gabriella Corona, Simone Neri Seneri (eds), *Storia e ambiente. Città, risorse e territori nell'Italia contemporanea*. Roma: Carocci, 2007, pp. 179-194.

Articles in academic journals

- 20) *Not to Us Chained': Nature and the Radicalism of Sacco and Vanzetti* (with Chad Montrie), «The Massachusetts Historical Review», Special volume 1, 2023, pp. 138-164.
- 21) *La letteratura sulle relazioni fra "uomo" e "natura" prima dell'onda ambientalista (1869-1960)*, «Storia e Futuro», 57, 2023, pp. 73-84.
- 22) *The International Labour Organization facing the UN Conference on the Human Environment (1968-1978)*, «Annals of the Fondazione Luigi Einaudi», 56, 2, 2022, pp. 53-72.
- 23) *Mecha and Kodomo Anime, Pop Culture, and Mass Environmentalism. First Notes on the Top Down Transmission of Ecological Ideas in the Decades of the Ecological Crisis (1960-1990)*, «Storia e Futuro», 52, 2020.
- 24) *Environmental History in Italy. Some considerations on historiography*, «Storia e Futuro», 50, 2019.
- 25) *Saperi ambientali, urbanistici e decisioni politiche in Italia dalla seconda metà dell'Ottocento al tempo presente*, «XXI Secolo», 40, 2017, pp. 67-83.
- 26) *Appunti sulla storia dell'ambiente: problemi, metodologie, approcci, snodi tematici*, «Bollettino di Clio», XV, 6, 2016, pp. 12-17.
- 27) *La questione ambientale a Napoli in una prospettiva storica*, «QCR. Quaderni del Circolo Rosselli», XXXVI, 1-2, 2016, pp. 115-119.
- 28) *Movimenti di iniziativa popolare e beni comuni: promozione di un modello economico alternativo o difesa del particolare?*, «Glocale», 9-10, 2015, pp. 193-206.
- 29) *Firenze e l'ambiente (1980-2015)*, «QCR. Quaderni del Circolo Rosselli», XXXV, 3-4, 2015, pp. 97-107.
- 30) *Metabolismi urbani e modelli di consumo. Appunti sul caso europeo*, «Zapruder», 35, 2014, p. 142-146.
- 31) *La parabola dell'ambientalismo italiano: dalla centralità dell'associazionismo al successo del localismo Nimby*, «Ricerche Storiche», 1, 2013, pp. 131-148.

- 32) *Salting Fresh Waters. Industries, Tourism and the Environment on Tuscany's Central Southern Coast*, «Storia e Futuro», 29, 2012.
- 33) *La storia dell'ambiente in Italia: appunti sullo stato dell'arte*, «Ricerche Storiche», XLI, 2011, pp. 489-496.
- 34) *L'Ambiente nella storia. Appunti per una riflessione sulle interazioni fra l'uomo e la natura*, «Parolechiave», 44, 2010, pp. 165-175.
- 35) *Federico Paolini discusses Geneviève Massard Guilbaud*, «Global Environment», 6, 2010, pp. 186-189.
- 36) *Degrouth: A Slogan for a New Ecological Democracy. Serge Latouche by Federico Paolini*, «Global Environment», 2, 2008, pp. 222-227.
- 37) «*Cavalcando verso Samarra*», ovvero alcune riflessioni sulla folle corsa incontro ad un possibile baratro ambientale. *Intervista ad Enzo Tiezzi*, «I Frutti di Demetra», 16, 2008, pp. 61-68.
- 38) «*Waiting for a Fair Future*». *Talking about Environment, Well-being and Justice. An interview with Wolfgang Sachs*, «Global Environment», 1, 2008, pp. 250-263.
- 39) *Firenze e le sue acque (1945-1980)*, «Ricerche Storiche», 3, 2007, pp. 703-714.
- 40) *Industria diffusa e inquinamento nell'area fiorentino-pratese (1946-1995)*, «I Frutti di Demetra», 15, 2007, pp. 33-42.
- 41) *Sviluppo e trasformazioni ambientali nell'area fiorentino-pratese (1946-1980)*, «Ricerche Storiche», 3, 2006, pp. 461-476.

Writings in the History of the Automobile and Transport

Books

- 1) *Storia sociale dell'automobile in Italia*. Roma: Carocci, 2007.

- 2) *Un paese a quattro ruote. Automobili e società in Italia*. Venezia: Marsilio, 2005.

Book chapters

- 3) *Designing a New Society: A Social History of Italian Car Design*, in Grace Lees Maffei and Kjetil Fallan (Eds), *Made in Italy. Rethinking a Century of Italian Design*. London-New York: Bloomsbury, 2013, pp. 211-224.
- 4) *Greening Mobility History in Italy: Toward an Interdisciplinary Way to Environmental Mobility Studies?*, in Peter Norton, Gijs Mom, Liz Millward, Mathieu Flonneau (eds.), *Mobility in History. Reviews and Reflections*. Neuchatel: Editions Alphil-Presses Universitaires Suisses, 2011, pp. 145-150.
- 5) *Gli italiani e la motorizzazione (1950-1974). Appunti per una storia sociale e ambientale dell'automobile*, in Andrea Giuntini, Claudio Pavese (eds), *Reti, Mobilità, Trasporti. Il sistema italiano tra prospettiva storica e innovazione*. Milano: FrancoAngeli, 2004, pp. 181-203.

Articles in academic journals

- 6) 驶向新时代：20 世纪意大利汽车设计社会史
«Zhuangshi», 278, 6, 2016, pp. 32-38.
- 7) *A Country "up to the neck in cars": Automobiles and the Emissions Regulation in Italy (1950-2008)*, «Storia e Futuro», 37, 2015.
- 8) *Transport and the Environment in Italy (1950-2006)*, «Economics and Policy of Energy and the Environment», 2, 2012, pp. 219-244.
- 9) *Trasporti e ambiente nell'Italia del Novecento (1950-2001)*, «Ricerche Storiche», vol XLI, 2011, pp. 565-587.
- 10) *Automobili e ambiente: verso una storia ambientale della mobilità?*, «I Frutti di Demetra», 21, 2010, pp. 5-13.

- 11) *A Country on four wheels. The car and society in Italy (1900-1974)*, «TsT- Transportes, Servicios y Telecomunicaciones», 17, 2009 pp. 108-130.
- 12) *La malaria delle città. Motorizzazione privata e degrado ambientale (1950-1974)*, «I Frutti di Demetra», 7, 2005, pp. 27-32.
- 13) *A Study of the Car in Italy. Notes for a Social and Environmental History*, «La Lettre du Gerpisa», 183, 2005, pp.12-14.
- 14) *“Torpedo Blu” VS “Topolino Amaranto”. Appunti per una storia culturale dell’automobile*, «Ricerche Storiche», 2-3, 2004, pp. 427-444.
- 15) *«La più grossa sciagura sarebbe se la Fiat entrasse in crisi». Gianni Agnelli, le automobili e l'Italia nei tardi anni Sessanta*, «Contemporanea», 1, 2004, pp. 85-96.

Writings in Global Issues

Books

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